Graperies for Amateurs.

THERE is probably not an individual in the horticultural community whose feelings at this moment are not more or less imbued with the enthusiasm prevalent on the subject of Grapes ; it amounts, in fact, almost to a *furor*, and is by no means confined to those who make Grape culture a specialty. All classes seem to be setting in with the general current, and we are glad that it is so. We can perceive wherein much good will result from it, not the least important of which will be a higher standard of excellence in the Grape itself, improved modes of culture, and a vast improvement in the public taste. Old varieties will give place to new and better ones, and the prejudices of the few whose minds can conceive of nothing more refined than a "fox," will be swept away like straws. Thus far, we can see no occasion for saying one word to check this spreading enthusiasm ; it is doing a good work, and, up to a certain point, we mean to encourage it. When that point is reached, we shall have something to say.

Our present object, however, is to take advantage of the prevalent enthusiasm, and direct a portion of it to a particular point, and open up a source of enjoyment to the amateur, which has hitherto been thought to be beyond his reach. We here use the word *amateur* as meaning one who, without reference to riches or the want of them, mainly cultivates his plants with his own hands ; and this is the only meaning the word ever should have among horticulturists. When we say, therefore, with this definition before us, that we propose to open up a source of enjoyment to the amateur which has hitherto been thought to be beyond his reach, we simply mean ,that in the one case the cost has been thought to be beyond the means of a man in moderate circumstances, and in the other the labor greater than a rich man would be willing to undertake. Both these positions involve palpable fallacies, as will presently be seen. Let us state, however, more particularly, the classes whom we would include in our remarks. There are men in moderate circumstances who can not afford to keep a gardener, but who would gladly indulge their taste in this way, provided it could be done at a moderate cost. There are men of considerable wealth, on the other hand, who need physical recreation and amusement, and who would seek it in this way, provided it were not too exacting and laborious. These are the persons to whom we would chiefly address our remarks, though there are others on the confines of both classes to whom they would be quite as applicable. We have no desire to indulge in imaginary speculations, or to mislead by placing too low an estimate on the labor and expense necessary to secure a fair and reasonable success ; we have not, therefore, depended entirely upon our own experience, but have sought information among our amateur friends, all going, however, to confirm the conclusions at which we had already arrived. We are thus enabled to state, for the benefit of those who desire to embark in the culture of grapes under glass, with the views before indicated, that they may freely do so without any misgivings as to the amount of labor and

cost, or the degree of pleasure to be derived from it. Among those thus engaged, there is a great unanimity of opinion on all these points. To be a little more precise, let us take the example of a house 10 by 30 feet. A plain, substantial house of these dimensions, if erected against another building, can be built for about $150 ; and it will be as good, for all practical purposes, as one costing $500. A man who has the means can make a grapery cost almost any sum he pleases, and the cost is often increased at the sacrifice of real utility. The beauty of a glass structure of any kind should consist mainly in the objects which are grown in it, and not in mere external ornamentation ; an excess of the latter, indeed, often renders the former wholly unattainable. But to return to details. A large item in the way of expense can be saved by making the borders on the inside of the house ; and this plan should be adopted, not alone because it is cheaper, but because it is also better than an outside border. We have tried it for many years, and know it to be so. It has the advantage, too, of enabling us to erect graperies in positions where otherwise we could not have them ; and if the plan were generally adopted, there is no reason why graperies should not become as common in the midst of our great cities as they now are in our suburbs.

But we shall probably be told that the great demand of time and labor incident to the care of a grapery, involving, as it does, no inconsiderable knowledge and study, will prove a fatal drawback to the amateur, even though we should reduce the item of expense within his means. The objection has force, and we are by no means inclined to underrate it ; but we know that it has been very much over-estimated. Many amateurs already have sufficient knowledge to insure to them a good degree of success, and the intelligence and good sense generally possessed by this class of persons, render the attainment of knowledge on this subject both an easy and a pleasant undertaking. This knowledge once attained, the labor of taking care of a small grapery is reduced within moderate limits. Let us, for example, take a house of the size above named, and include all the operations incident to growing a crop of grapes, such as watering, pruning, thinning, &c., &c. If the growing season be taken, the average time required will not exceed *one hour a day;* and this one hour need not necessarily be given all at one time, but may be divided between morning and night. Now there are very few persons who can not spare this small amount of time from their necessary business avocations, and who, in fact, do not daily waste much more in a manner which affords them neither pleasure nor profit. The work to be done, with the single exception of watering, is not laborious, but, on the contrary, mostly light and pleasant. With the help of a man at the pump, the labor of watering becomes comparatively easy ; and with the accessory of an elevated tank, or where a supply like the Croton can be had, it is reduced to mere play.

The above are the chief obstacles to be encountered by the amateur grape-grower, and his intelligence will place them under easy control. We shall probably be told of the importance of ventilation, and that this can not be attended to while one is absent at his business. The simple fact is, that a good deal too much ventilation is done in graperies ; the little attention that may at times be needed during mid-day can easily be rendered by almost any member of the family. The ventilators can be so set in the morning as to seldom need alteration during the day, as we shall fully explain here-

after, when presenting our plans. The chief point is moisture, and this is the great desideratum which the amateur will have to provide for. But this also is within his control, and thus there is no real obstacle to the amateur indulging his taste to the utmost of his time and means.

We have said nothing of the *pleasure* to be derived from the care of a grapery, but we must here confess that this very thing was our chief inducement in writing this article. What we have enjoyed in that way we would gladly place within the reach of all our readers. We love a fine lawn; we love stately trees and flowering shrubs; we love a beautiful flower-garden; so also we love a choice orchard of apples and pears; and we love all these things more than most people love them; but if, unhappily, we were compelled to confine our attention to one thing, our present impression is, that one would be a grapery. And thus our readers can judge in what estimation we hold it as a source of unmixed enjoyment. Let us hope, therefore, that more of our amateurs will betake themselves to this elegant and profitable amusement. We shall do what we can in the way of plans to assist them.

THE AZALEA INDICA.

BY FOX MEADOW.

When man is left to do his own talking and writing, Mr. Editor, it is generally the free, spontaneous evolutions of the mind, and that, too, which lies nearest the heart; so with gardeners. The plants or fruits they love best, they are sure to talk about. We have "pets," sir, in our greenhouses and fruit-gardens that we prize, love, and cherish as dearly as does the banker his auriferous coffers. The Azalea is a pet of ours, Mr. Editor, and we would like to tax your patience a little while we try to talk about it.

It so happened, in the course of our life, that we lived among a very large family of these plants, and the constant paternal care of the head of this family over the "*rising generation*," was the means of fully developing the peculiar characters, qualifications, and properties of *each individual*, and we should also say the *power* of each; for plants have power as well as men. Now, it is about this "*power*," or capacity to grow, which we are just now going to call the attention of plant amateurs to. The Azalea, as it is most generally met with in the plant collections of the day, is a hard-wooded, scrubby bush—little and old. Its age may be traced for years gone by, by the succession of "*jump ups*" it has taken every year from the base of its flower-buds. My neighbor, when he happens to flower a plant whose head somewhat resembles the "*flat-headed*" bouquets they sell in New York, thinks he has got a beautiful specimen. He tells you so; says it's a hard-wooded plant, and takes some years to grow into a large specimen; says all the wood it will make comes from and around the flower-buds; and when there are no flower-buds, it comes from the point of the shoots, near the place where the flower *ought* to have been. But still it is beautiful; yes, beautiful and wonderful. Wonderful; because our comprehension can not conceive the possibility of the plant making or producing even this small amount of wood under the circumstances in which it is placed. What circumstances have you reference to? I mean the Chinese dwarfing, stump-

ing, scrubbing system. The system that ascertains how long it is possible for a plant to exist in a three- or four-inch flower-pot without a shift, *and live.* The system that proves to us how long it is possible for a plant to live and eke out a miserable existence without supplying to the root the constituent elements of its nature. That system which makes, or tries to make, "*air-plants*" of all *terrestrial* vegetation. You tell me you are "*growing*" Azaleas, sir? Nonsense! You are jesting with me; you are deliberately watching them die; and your heart must be as hard as that *black-baked*, hard flower-pot in which your poor Azalea is now dying. Its life to save! Too late! Its constitution, if it ever had any, is lost, broken, *starved to death.* Think you, Mr. Amateur, you ever allowed that plant to develop its power? that you ever beheld the exquisite form of its flowers, the purity of its colors, or that the petals ever developed their proper substance?—the spotting or striping, its vividness, or the beautiful foliage, its adequate texture? Never, sir. The sight of one well and good grown plant in bloom, would make that hard heart of yours leap with joy, and you would never forget the sight. We have seen them grown as pyramids six feet high, and nearly as much in diameter at the base, *from a cutting in three years' time.* We will tell you the secret, and how to do it, if you will only promise not to tell any one else. You go to a nurseryman and make your selection of sorts. Well, you have the sorts, and that's all you can expect from that quarter. They don't spend their time in training plants; so they are not shaped right to begin with—for we form them pyramidal. We stump these plants in pretty closely, for the reason that we require young soft wood for cuttings. These cuttings we take off when about an inch or so long—(we never let them get *hard*); we then place them in a cutting pot. (Description given by Mr. Saunders, for preparing the pots, is the "*modus operandi.*") The pots are plunged in a good strong bottom heat (dung-bed); and in about two or three weeks they are finely rooted. They are potted into small pots, and replaced in bottom heat; very shortly you will see them starting to grow; and when the young plants are about six inches long, nip out the point. This makes it break three or four shoots. As soon as the young shoots appear, re-pot into a five-inch, training up, at the same time, the most eligible shoot as the main stem of the plant. You must now keep your eye narrowly on your plant, and watch it. You will perceive these young shoots swelling—getting thicker. This indicates that the roots are getting hold of the compost in the second potting. This is the time to nip out the points again; and do not forget the form the plant is destined to be when full grown. This must be made as you go along. You must also watch the roots: so soon as you see the young white threads getting round the pot, *into another at once;* and so continue. Now, remember, as long as you continue to practise the "*stopping,*" so long will the plant *continue to grow;* and as soon as *you* stop, the plant will endeavor to *ripen the wood;* and if it achieves the latter, *there is an end* to the specimen. They must be treated as stove plants, and grown in heat; treated with the syringe as you would vines. The latter process keeps them free from all insects. They then *live* in a high moist temperature.

The stopping process is the means by which the branches are produced and symmetry given to the plant; and this is not all. It also forces a multiplicity of roots; increases the capacity in the roots to doubly collect strength and energy from the soil, and manifest itself by its renewed vigor

in the young branches. The first season the cutting is grown to a large size—often four feet by three—but without a flower-bud on it. How is this? Because the stopping process never allows the wood to ripen. In this way we continue until the size is attained that may be required; and, when this is perfected, *discontinue* the stopping: the wood becomes ripe, and the flower-buds are formed at the terminals. Our next attention is required when they are coming into flower. You will perceive around the flowers these young shoots coming into growth that were spoke of in the commencement of these observations. These shoots must be all pinched out, or plucked out; for if they are allowed to remain, they deteriorate the size and brilliancy of the flowers. There should be no *wood growth* allowed so long as the plant continues in flower; but as soon as it is out of flower, take a hedge-shears and clip it evenly all over; put it into a good moist heat, and let it remain there till the wood is ripe, and the flowers set and plumply developed. Then they can be placed in any cool situation till they are required for blooming. We must say a few words about the compost; and the rest we must leave in the hands and heads of the intelligent amateur.

Compost, from first to last, equal portions of thoroughly decomposed cow manure, rough, sharp sand, leaf-mold, peat, and light open loam, pots thoroughly drained, and water often with guano water.

We should like to see some of our amateur plantsmen turn their attention to a few varieties, such as Exquisita, Variegata, Beauty of Europe, Iveryana, Duke of Devonshire, Fielder's White, &c., and place a few such specimens as above alluded to on the tables of some of our floral exhibitions. The financial department of these societies would then very soon feel its influence; for they would soon be enabled to double their premiums, and the "*almighty dollar*" would soon work wonders on the feelings and brains of men that can not see beauty in plant-growing, unless every individual plant is similar to the wonderful ANÆCTOCHILUS SETACEUS, filled with channels of gold, running through every pore and tissue, dazzling their eyes, and maddening their senses.

[Here our amateurs and plant-growers have the best article on growing the Azalea which we have yet seen. We commend it to the attention of members of Horticultural Societies generally. Let them grow such specimens, and place them on their exhibition tables, and the results predicted above will in the end follow, for no man or woman with a soul can long resist such a sight.—ED.]

BRANDYWINE GRAPE.

BY W. D. BRINKLÉ, M. D., OF GROVEVILLE, N. J.

SEVERAL bunches of this luscious grape were sent to me by Dr. Henry F. Askew, of Wilmington, Delaware, in 1859. They were taken from the vine on the 14th of September.

Berry rather large, one inch in its longitudinal, and five-eighths of an inch in its transverse diameter; *form* oval; *color* greenish white.

Bunch large, six inches long by three broad, sometimes shouldered and

rather compact in its structure; *flesh* tender; *flavor* saccharine and delicious; *quality* "best;" *maturity* the middle of September.

This exceedingly fine grape originated in the garden of Mr. J. Robinson, in Wilmington, Delaware, about the year 1840; and is an accidental seedling, probably of the Malaga. After having fruited two years in Mr. Robinson's garden, and as he was about to remove to Baltimore, the original vine was taken up and transplanted on the premises of his brother-in-law, Dr. H. F. Askew, of the same city, to whose kindness I am indebted for its interesting history. The removal proved fatal to the original vine. Fortunately, however, a cutting from it had previously been taken by Mr. James Hollingsworth, of Wilmington, which grew and prospered, until it became necessary to use the ground on which it stood for building purposes. This vine was then removed to Dr. Askew's farm, near Wilmington, but, unfortunately, did not survive the change in its locality. Before its removal to Dr. Askew's farm, cuttings were taken by the person on whose property the vine which fruited the specimens sent to me by Dr. Askew now stands, and has been fruiting for several years

[We are obliged to Dr. Brincklé for his description of this new grape. We presume it is the one alluded to by Dr. Norris in our February number. We should be glad to see the fruit in its season.—Ed.]

DESIGNS IN RURAL ARCHITECTURE.—No. II.

AN ORNAMENTAL ELIZABETHAN COTTAGE.

BY G. E. HARNEY, LYNN, MASS.

A person fond of poetry and old legendary associations, would naturally look with some degree of pleasure upon an architectural design, in the composition of which those sentiments were embodied and carried out; and we know of no period in the history of architecture which will furnish us with more striking examples of the picturesque and ornamental, as applied to domestic buildings, or more display of fancy and imagination, than that part of the Tudor era during which the "good Queen Bess" was occupant of the English throne.

During the reign of Henry VIII, Gothic architecture had reached the perfection of its beauty, and it became necessary to bring about some change of style and ornament; accordingly, architects and others who had extended their travels into the southern countries and studied art in those countries, introduced on returning some of the principal features of the Italian and Florentine schools of architecture.

Hence we see the prevailing architecture of this period to consist of compositions of all sorts of odd fancies and grotesque designs, queer mixtures of Gothic and Grecian, though producing, when judiciously applied, what to our mind are the coziest, sunniest, snuggest little cottages that we know of. Here we find warm, sheltered nooks, and large, cheerful fire-places; broad windows and oriels which court the sun, and steep roofs to shed the snows in winter; heavy verge boards topped with carved finials; round and pointed arches supported on twisted columns of Italian verandas; ornamented balconies and highly-wrought chimney-tops; in fact, almost everything

AN ELIZABETHAN COTTAGE.

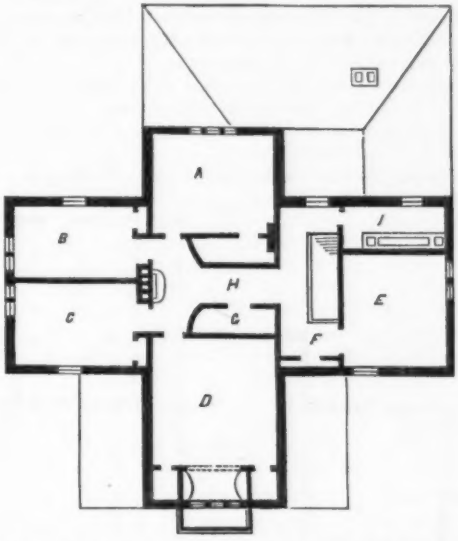
in the way of ornament which the fancy could suggest was used by the architects of that period, with but little regard to severe architectural style as practised by their predecessors.

With these remarks we present a design which shows some of the characteristic features of the Elizabethan style. The plan comprises, first, a vestibule, *A*, opening by glazed doors into the main hall, *B*, which measures 14 feet by 16, contains two cloak closets, and is lighted by two long casement windows opening upon the verandas, *C C*. Out of this hall we pass on the left into the parlor, *G*, 14 by 18 feet, and on the right to the staircase hall, *F*. Directly fronting the main entrance is an arched recess filled with seats, and communicating by means of double stained glass doors with the dining-room, *D*: on each side of this recess is a good-sized china

closet. The dining-room measures 14 feet by 17, and is lighted by a broad mullioned window, which overlooks a pavilion, *J*, in the rear. The library, *E*, measures 12 feet by 18, besides the additional width of the bay window which projects from its side. The back entry, *H*, is 4 feet wide, and opens into the dining-room, *D*, kitchen *I*, water-closet, *K*, and out upon the pavilion, *J*. The kitchen, *I*, is 14 feet square, and contains cooking-range and water apparatus. A pantry, *L*, and storeroom, *M*, open from it. In the cellar may be found the usual kitchen offices. The second floor contains five chambers, *A*, *B*, *C*, *D*, *E*. The front room has a recessed window opening upon a balcony over the entrance door. All other chambers have closets, and a large clothes-press or cedar closet, *E*, opens from the corridor, *H*.

This cottage should be built of stone, with the ornamental portions of wood. Great care should be taken in building to have these ornamental trimmings made in a solid, substantial manner, and of very heavy stock;

for if they have the least appearance of flimsiness, the effect of the whole design will be spoiled, and it will be sure to meet the censure of those who so justly condemn "gingerbread cottages." The interior finish should be of



the same general style as the exterior; we should prefer some hard wood simply oiled, showing the natural color and grain. The halls and vestibule might be wainscotted to the height of 2½ feet all around, and the walls brown finished. Height of first story 11 feet 6 inches in clear. The cost of the cottage would be about $2,500 to $3,000.

GIRDLING THE VINE.

BY ANDREW S. FULLER.

About 1745, Col. Buchott, of Metz, in France, invented, or claimed to have invented, the plan of girdling, or, as the French call it, the annular incision of the vine. For this, he was awarded a premium by the Agricultural Society of France.

It was claimed that the invention would be of great value in hastening the maturing of the grape, as well as improving the quality. The latter point has been one in dispute among grape-growers from that time down to the present.

Thiebaut de Bernaud, in his Manual on the Vine, which was published in New York in 1829, says, "Girdling is a means of forcing the ripening of the grape, and increasing its size and quality. By the oldest records we have, it appears that it is a process that has been long and well known, and

was used to prevent the blighting of the vine. All writers on agriculture, from Theophrastes and Pliny down to Julius Hygin, speak of it in the most unequivocal terms as a practice in use among all the gardeners and vine-dressers of their time."

Wm. R. Prince, in his Treatise on the vine in 1830, makes similar remarks when speaking of this subject. As the author of the latter work is yet among us, we hope, for the benefit of others as well as ourself, that he will point out the chapter wherein we may find this subject treated in the works of the ancient authors mentioned. We do not say it is not mentioned by them, but simply that we have not been able to find it in any edition of their works which we possess.

The Agricultural Society of France, which awarded Buchott a premium for his invention, was composed of men who had read the Agricultural and Horticultural writings of the ancients; and, without doubt, knew what they contained in relation to the vine. This seems to preclude the idea that it was an old and well-known practice in the days of Pliny, Theophrastes, Columella, and other writers of their time, as has been claimed.

Strabo speaks of girdling layers of the vine before burying them, as it compelled them to form roots more abundantly than if buried without. This is well known at the present time; but it had no reference to the fruit, as is claimed by the authors referred to.

Torsion, or bending of the shoots, is much practised in France upon fruit-trees, as well as upon the vine; and it produces similar results, by hastening the maturing of the fruit, without being so injurious to the plant. This operation was well known to the ancients.

Du Breul, in the Revue Horticole, p. 86, 1857, says in relation to the subject, that "Lancry, in 1776, exhibited to the Society of Paris a branch of plums on which the operation had been performed, by which the size of the fruit had been very much increased; so much so, that the success of the operation was fully proved."

When speaking of girdling the pear, he says there have been many reasons given *why* it increases the size of the fruit, but none were satisfactory.

M. Bourgeoise, in the Revue Horticole of May, 1858, says, "Last season, I had the honor of presenting the Society of Agriculture of Paris some branches of the vine upon which had been performed the 'annular incision,' by which operation the ripening of the grapes had been hastened fifteen days, and at the same time the berries were much larger and more beautiful."

Upon this representation, a commission was appointed by the Society, of which M. Pepin was the reporter, to examine the experiments in his garden at Peray. With his report, he placed upon the Bureau of the President some remarkable specimens, showing the following results:

1st. A branch with two bunches in the normal state.

2d. A branch upon which the incision had been practised under the best conditions.

3d. A branch upon which a ligature had been placed instead of the incision.

4th. A branch taken from a branch of a stock which had received the incision upon the old wood.

He says, further, that he had repeated the experiment upon a branch, leaving three bunches, upon which was practised two incisions. The same phenomena were exactly reproduced. The bunch below the first incision remained in the normal condition. The bunch above the second incision

became much enlarged and more beautiful, as well as advanced in ripening. The bunch between the "incision" was only of half-matured size, and did not ripen at all.

The final result appears to be, that it is useful for every country or climate, but particularly for those of so low temperature as not to permit the grape generally to ripen, enabling them to produce grapes for *the table* of first quality, and equal to the celebrated Chasselas of Fontainebleau.

Some of the writers upon grape-culture have recommended girdling as of the greatest importance, while others have denounced it as injurious to the vine, and only adding size and beauty in appearance to the fruit, besides depriving it of the power of acquiring the real excellence which it would acquire if ripened in the natural way. Still another class of writers have taken a medium course, and recommend its use only in particular seasons, such as cold, damp, or late seasons, when blight may be expected, and a failure of the crop is certain unless some means are used to hasten its maturity. Without doubt, the real value of the invention is this: it gives us an opportunity of getting a tolerable grape in unfavorable seasons, instead of getting none.

Wine made from grapes grown on girdled vines is always inferior to that from those well ripened in the natural way, and its keeping qualities are very much inferior. If practised extensively upon the same vine for several years in succession, it weakens the plant, if it does not entirely destroy it. In some parts of Europe, it has been practised in the same vineyard for half a century, and yet the vines are thriving; but they only girdle a portion of the vine each year, always allowing a free circulation between a sufficient number of leaves and the roots to keep the plant healthy.

We have often seen what were apparently remarkable results from its practice upon the Isabella and Catawba vines in this vicinity; and, from the large and beautiful appearance of the bunches, many a premium has been awarded at our Horticultural and Agricultural Fairs for grapes produced in this way, although the *quality* of such fruit was very inferior to other specimens exhibited in competition of less size, because these were in their normal state.

A friend of ours, who lives in an adjoining State, where the Catawba does not fully ripen in the open air, stated to us not long since that he had taken premiums on his *dropsical* Catawbas for several years in succession over all competitors, because of their fine appearance, which was produced by girdling.

Girdling may be said to be useful in unfavorable seasons in three ways:

1st. To prevent blighting of the blossoms.

2d. To hasten the maturing of the fruit.

3d. To increase the size.

To accomplish all of these, we must perform the operation a few days before the flowers expand; but if the season is favorable, and the fruit sets, it can be performed any time until the fruit is fully grown, only the sooner it is done after the fruit is set the better the results.

The mode of operation is to cut a ring of the bark clean to the true wood. The size of the ring should be from one-eighth to one-half an inch in breadth. It can be performed on the old as well as new wood; but the last year's growth is preferred. Do it only on that which you intend to throw away at the next season's pruning.

THE PELARGONIUM.

BY JAMES H. FRY, NEW BRIGHTON, S. I.

Having noticed in the February number an article on the Pelargonium, I think the author's practice and mine somewhat differ ; but I will leave that to be decided by those interested. This being one of our many attractive summer blooming plants, too much can not be said in its praise ; no matter whether seen in the show-room or upon the greenhouse stage, it will be sure to gain the admiration of all lovers of Horticulture, not only for its flowering propensities, but for its varied colors and beautiful habit. There are some known as Fancy Pelargoniums, with much smaller flowers and foliage, and also of a much dwarfer habit, but none the less beautiful ; in many cases they are preferred to the larger growing sorts, for, as a general thing, they bloom more freely. In Great Britain, where there is a greater demand for them, they are propagated at all seasons of the year, but as a general thing in the fall.

In this country, where so many things have to be done in a short space of time, the best and surest way of propagating and growing the Pelargonium in a limited time must be adopted. For my part, I would never use bottom heat, for there is too much trouble and care attached to it compared with the easy method I adopt. Although not a new one, (for I suppose it is well known to the practical gardener), yet for the benefit of amateurs and those interested I will repeat it. In the first place, we will suppose you to have some plants in bloom, or nearly so ; as soon as they have done flowering, which will be in June or July, cut them down, leaving only two or three joints of this season's growth ; this done, take the plants outside and lay them down on the side of the pot, so that they shall not receive any water whatever until they commence to break, which will be in a week or two ; then set them up and water them. When the shoots have grown an inch or so, shake them well out, and re-pot them into much smaller pots than those which they were taken from, well drained, using rich sandy loam ; put them upon a plank to keep the worms out of the pots, and keep them fully exposed ; water them regularly, and they will soon fill the pots with roots, and make nice short-jointed wood. When the shoots are two or three inches long, pinch them back and make them break again. The object is to get as much growth as possible in the fall, and likewise to keep them bushy, and form the base of handsome plants for next season. Before taking them into their winter quarters they will require to be shifted into a larger pot (the one that they will be intended to bloom in); well drain them, and cover the drainage with a little moss to keep it from getting choked up with the soil. Follow these directions, and depend upon it you will get specimen plants worthy of the name.

In arranging a stage of Pelargoniums, we require plants of different sizes; well, we will suppose the plants alluded to above to be the largest, and the ones we are going to propagate to be the smaller ones ; select from the branches the softest and best shoots, cutting them into pieces with three or four joints ; make a clean straight cut close under the joint to be inserted, also cutting off the leaf at that joint, leaving the others on. This done, prepare a small frame, such as is used for melons, with sifted soil ; cover it with a quarter of an inch of sand, put the cuttings in two inches apart

each way, and water them. They will not require any glass over them, but simply shaded with a piece of muslin in the daytime, taking it off at night: in two or three weeks, if attended to, they will be rooted, and fit for putting into small pots. Put them into a cold-frame, and keep close for eight or ten days; pinch them back and re-pot them before taking them into the greenhouse for the winter, where they should be kept as near the glass as possible. In growing Pelargoniums for exhibition, shape as well as quality is admired. By tying a piece of twine around the pot close under the rim, and then tying the branches down, *you do away with poking sticks and peys into the pot, whereby the roots are injured;* and not only that, but you can get your plants low and bushy. When tying them down, the plants should be dry, for the branches will give more readily, and not be so liable to break. Let your own judgment guide you when you are stopping or pinching them back; get the rim of the pot well covered; the centre will take care of itself. When they are in bloom the strings can be taken away, so that you can show them without sticks or support of any kind. During the winter season they require frequent fumigating with tobacco to keep down green fly, using water very sparingly.

[Mr. Fry probably alludes to an article in the February number for 1859. We esteem his plan a much better one. He is hardly explicit enough on some points to satisfy amateurs; for instance, they will scarcely be able to judge at what time he prefers to put down cuttings for his small plants. If they select the early part of September, they can hardly go amiss.—Ed.]

ORIGIN OF THE KING APPLE.

BY JAMES M. MATTISON, JACKSONVILLE, N. Y.

Having given the subject a pretty thorough investigation, I present the following as the true history of the King Apple of Tompkins County:

About fifty-six years ago, Jacob Wycoff brought it from Warren Co., N. J. Mr. Wycoff moved to this county about sixty years ago, and finding the art of grafting practised here, procured the grafts while on a visit fifty-six years ago. Mr. Wycoff is now dead, but always claimed it to be a seedling, and it was named by him King. The Congress of Fruit-Growers at Rochester added Tompkins County to it, to distinguish it from another of the same name.

On a visit this winter I undertook to trace out its origin, and went to the place where it is said to have originated. This is about one and a half to two miles from Washington, Warren County, N. J. I found very old trees that had been grafted; they seemed to be over fifty years old; two aged men, Daniel Fleet and William Crivling, near Asbury, were both acquainted with it from boyhood. It originated on the north side of the Musconetcong mountain, about one mile from where these gentlemen live. Mr. Jesse Weller says he knew one very old tree on his farm forty years ago; it has been dead several years. They call the apple Toma Red throughout that section. It does not appear to be much disseminated, being confined to a small locality. I brought some of the apples with me, and compared them with mine. I also gave them some that were raised in

my own orchard. They are not quite as high flavored in New Jersey as they are here between the lakes.

The tree is entirely distinct in growth. When I was in New Jersey I pointed out trees as I was going along the road, and inquired if they were not what we call the King of Tompkins County, and they said they were. The limbs grow so very horizontal that the tree needs scarcely any pruning, and one of its good qualities is, it is a regular bearer every year, and a fine, thrifty grower. Hundreds of barrels have been sold from this vicinity this year, and we are all of one mind, that it is the most productive, and will sell for the largest price per barrel of any market apple that is raised in this vicinity. Dealers realized four and five dollars per barrel last fall. The apple is one of those crimson red with yellow ground that attract the eye, and its color will not disappoint you when you come to eat it. Its very agreeable perfumed flavor is equal to the Swaar. It wants gathering ten to fifteen days before the Baldwin or Greening, and if carefully done, will keep good until the 1st of May.

[We think Mr. Mattison has made out a pretty good case for the King Apple. Its origin, as far as we are aware, has never before been traced to any particular locality; but the facts given above would seem to put us in the way of clearing up much of the obscurity which has hitherto surrounded the subject. Can any of our friends in Warren County give us additional facts?—Ed.]

IOWA PRAIRIE SKETCHES—No. 3.

BY "MINNIE."

The unnumbered swells of a rolling prairie, covered with tall grass, and waved by the wind, have been, by many, likened to a view of the sea with her swelling tides. But there is another feature in which there is a resemblance; for, as far as the eye can reach, each swell is so nearly the *fac simile* of a thousand more, on every hand, that you might as well fix the eye on one of ocean's waves, and say, this shall be a mark to guide me in my course. In fact, the *unsettled* prairie is without a landmark—save one—and the traveller soon becomes bewildered and lost—unless, like the mariner on old ocean's bosom, he is provided with a compass—until he discovers *this one mark*, Nature's own compass, guide, or finger-board, to show the wandering stranger *which way to go.*

This wonderful provision of Providence is the *Silphium laciniatum*, of the natural order Compositæ; known to the people by the common name, "Rosinweed," and which is sought by the school-boy in autumn, that he may obtain the resin which exudes from it in abundance.

The S. laciniatum can not long remain *un*noticed by the observing traveller, although his attention is not attracted to it by any *beauty* which the coarse, rough weed possesses; but by its *radical, sinuate-lobed leaves*, several of which spring from each root, and generally overtop the grass by a few inches; their lobes all point the *same way*, which soon strikes the eye as *something peculiar;* he stops to examine, and soon discovers that the lobes of all these leaves always point exactly *north and south.*

From the centre of these arises the tall flower-stalk, bearing rough, pinnately parted or almost entire leaves; opposite at or near the top, alternate lower down, and pointing, *not*, like the radicals, always north and south, but toward every point of the compass.

The flowers are yellow, much resembling, in general appearance, small sun-flowers, and, like them, *turning their faces*, while young, to follow the sun.

The height of the stalk is from six to twelve feet. The radical leaves, with their long petioles, attain a length of two to three feet, probably even longer in very high grass.

The caulescent leaves are much smaller, and nearly or quite sessile.

This plant does not seem inclined to *grow* where the ground is broken up and cultivated, and probably it is destined, like the poor Indian who was formerly guided by it, (as he followed the buffalo in the chase, or hunted the deer and prairie-chicken to obtain food,) to *disappear*, as the white man, with his plow, shall take full possession of the soil.

[We regret to hear that you have been ill, Minnie, and gladly welcome you back to health and to the pages of the HORTICULTURIST. We hope to hear from you often about the flowers you so dearly love.—ED.]

INSIDE, DETACHED, AND DIVIDED VINE BORDERS.

PREVENTION OF MILDEW ON THE GRAPE.

BY WM. BRIGHT, PHILADELPHIA.

THE editorial article in the last number of the HORTICULTURIST, on the "New Method of Constructing Vineries," afforded me much gratification. I esteem it a high compliment to find my plan of inside borders commended by the acute and discriminating conductor of this journal; and I am pleased to learn that borders, embodying the leading feature of my plan, have been proved, by years of trial, practically successful, and in many important respects a great improvement upon the common borders. I first constructed borders upon the plan in question about one year ago, and when I published my description of the "inside, detached, and divided border," I supposed that I was the first, either in England or America, to adopt this improvement. When I was in England last winter, I described my plan to several of the leading grape-growers in the first establishments in that country, and all acknowledged that it was new and promised good results. Neither the "Book of the Garden," by Mackintosh, nor any other English work or journal, has, to my knowledge, described or suggested an inside divided vine border, detached from the front wall, and drained and ventilated as I proposed. But it seems that you, Mr. Editor, penetrated this field of improvement eleven years or more ago, and constructed a border embracing the leading features and principles of my plan; I cheerfully yield to you the credit due to your ingenuity, originality, and judgment, and am right glad that I have found so able and intelligent an ally in the advocacy of the new border.

With your permission, I will state briefly wherein I think my inside border,

detached from the front wall by an air chamber four inches wide, is superior to a border resting against a front wall, even if made hollow so as to contain a body of air. In the first place, it is cheaper than a wall four or five feet thick, made hollow. My front wall is only nine inches thick, and the front wall of my border is only four inches. Secondly, any wall, even if made hollow, in very cold weather conducts heat away from the border. But chiefly I prefer the detached border because the open air chamber between the front wall and the border furnishes a passage through which the air of the house may be carried down front, and (by means of proper tubes or flues) entirely under the border. My object is to keep the whole border, at all times, as near as possible of the same temperature throughout (top and bottom) as the atmosphere of the house. It is true that the under side of the border and the air tubes will always be a little cooler than the house, but this only serves to condense the moisture in the air, and hence a current passing through these tubes must always become highly charged with humidity.

This new border, entirely inside the house, detached from it, divided into sections or huge pots, and thoroughly ventilated on the sides and underneath, and extra drained, is now under full trial in several houses besides my own, near Philadelphia, and we shall soon find all the objections to it, if there be any.

The method of cultivating the vine, described in my recent work on the Grape, viz., the single-stem system, growing a cane one year and fruiting it the next, and then cutting it down and growing a new cane before fruiting again, I think will be found a plan well suited to all kinds of culture, in doors and out, but especially to the inside and divided border. The plan mentioned by the editor of the HORTICULTURIST, of growing a new shoot from a grape root while fruiting a cane from the same root, (practised also by the German vine-growers in Ohio,) I do not think will ever meet with the most perfect success. You can not easily grow wood and fruit at the same time. Either the fruit or the new cane must suffer. This is my decided opinion. But let the profession test the matter and decide.

There is one subject connected with the management of vineries, not noticed in my work on grape culture, upon which I feel like saying a word, and that is, *the prevention of mildew.* I am quite convinced that a comparatively shallow, not very rich, inside border, well ventilated and well drained, will do much towards keeping the vines in forcing-houses, and cold-vineries, in a healthy, hardy condition, so that they will be better able to resist mildew, than they are under the old system of deep, over-rich, sodden borders, partly outside. But there are still other means of preventing mildew which I desire to notice.

What are the chief direct causes of mildew on the Grape in the forcing-house? In my opinion, they are, *excessive moisture* with deficient light and heat, or *excessive dryness* with light and heat. The chief requisites for successful grape growing, after you get healthy plants into a proper border, are, 1st, light; 2d, heat; 3d, moisture; 4th, air: upon the judicious management of these four great agents the whole result depends. A high degree of heat in a very dry, ill-ventilated house, even with light, will produce mildew. Cold, damp air, with light or without it, will have the same effect as hot, dry air. In the absence of sunlight, the tendency to mildew is always greater than in bright, clear weather, no matter what the other

circumstances may be. Excess of humidity in a cold, dark, damp day is almost sure to produce mildew. The right management of the moisture of a house, in my opinion, is of far more consequence, and far more difficult, than that of air. It is astonishing how much heat the vine will bear, without injury, if you have plenty of moisture, plenty of light, and a little fresh air. With the condition just named, no matter how hot the house may be, if you don't boil the leaves, no mildew will be produced. When there is but little clear sun-light, the heat and humidity of the house tend rapidly to produce mildew. In a damp, warm, cloudy day, with little sun-light, and no wind, there is no danger in "airing freely." There are such days, when it would do no harm to remove all the sash from a hothouse, while warm, genial showers are falling, and let the vines and border receive a copious natural watering. But free ventilation is not so much needed in clear, light, brilliant days, as is generally supposed. On such days, if you have plenty of moisture, four inches of air, equally applied, along the top of each side of a span-roofed house, is amply sufficient. As I have said before, no matter what the heat may be, that of 212°, when you have got abundance of moisture and plenty of light, in a clear, brilliant day, and but little air is needed. When the atmosphere is charged with humidity in a very warm, cloudy, muggy day, then beware of excessive humidity in the house, without free ventilation. So, also, excessive humidity, in cold, dark, damp weather, is almost sure to create mildew.

I recommend, as a preventive of mildew, to pay particular attention to these facts, and especially to the management of Moisture. To this end, I place in my vineries large shallow *Evaporating Troughs*, sixteen or eighteen inches wide and four inches deep, running the whole length of the border, and resting upon it. These troughs are so contrived that the water can be pumped into them and let off at pleasure. In hot, light, dry, clear weather, these troughs are kept constantly filled with water, and the evaporation from such a surface of shallow water is immense, and serves to keep up an even and healthful degree of humidity without constantly sprinkling and syringing the house with the temperature at 100°; the evaporation from the troughs is so great that there is very little necessity for syringing, except to cleanse the foliage of the vines, and thus a vast saving of labor is effected at small expense. When the weather is cloudy, damp, and cold, then the water may be let off from the troughs, as a dryer atmosphere will be required to prevent mildew; and this is very readily done, returning the water to the cistern for future use. I think if gardeners will try these large evaporating troughs, for producing humidity in forcing-houses and cold-vineries, they will be highly pleased with their effect. Remember the principle, that *hot, dry air* will produce mildew as effectually as cold, damp air, and ventilation without humidity will not save you. If you have light, heat, and plenty of humidity, the vines will thrive in very little air, and will not mildew.

[We have to thank Mr. Bright for his excellent article on a subject so interesting to all grape-growers. We endorse his plan of inside borders cheerfully and confidently, because many years' experience has convinced us that its decided advantages over the old system can hardly be over-estimated. There can be no impropriety in stating our belief that we were the first to introduce the subject and test its value; we had never seen a line on the subject when we wrote our first article, which was several years after we had fully tested the plan. The reasoning which led us to adopt the

plan was so natural that we felt no surprise that somebody else had arrived at the same conclusions. When, therefore, we saw Mr. Bright's article in the February number of the *Gardener's Monthly*, we did not hesitate to give his plan a full and cordial endorsement. We have since received his work, which we notice elsewhere. We shall now briefly notice two or three points in Mr. B.'s article; and first, we must candidly own that his detached inside wall is more perfect than our single hollow wall. In *theory*, a hollow wall is a perfect non-conductor; in *practice*, it is several removes from that condition; and that is just the difference between the two. We have never seen a mason who could build a perfect hollow wall, though all profess their ability to do so. When such a man can be found, a wall need not necessarily be more than fifteen inches thick. We mentioned the case of one cane being fruited the full length of the rafter, at the same time that another was laid in for fruiting the next season, to show the vigor of vines eight years old in a narrow inside border. Though far from being perfect, it is a great advance upon the old spur system. M. B.'s plan, of giving the whole energies of the vine to the production of either fruit or wood, will, undoubtedly, yield far more satisfactory results.

There are three other points alluded to by Mr. B., viz., light, moisture, and heat, which are very imperfectly understood, but which are of peculiar significance in grape-culture. We hope his remarks on these points will be read attentively. We have elsewhere stated, that with a proper degree of light and moisture, no evil will result if the thermometer should rise to 175°; and Mr. Bright considers himself safe within 212°. We will here lay down the proposition, that, under proper conditions, the thermometer may be allowed to range, during the day, from 100° to 115° with decided benefit. What those conditions are, we shall explain fully on another occasion. In the mean time let our readers examine the proposition carefully, and controvert it if they can. We hope this first contribution from Mr. Bright will by no means be his last.—Ed.]

CHEAP COLD VINERY,

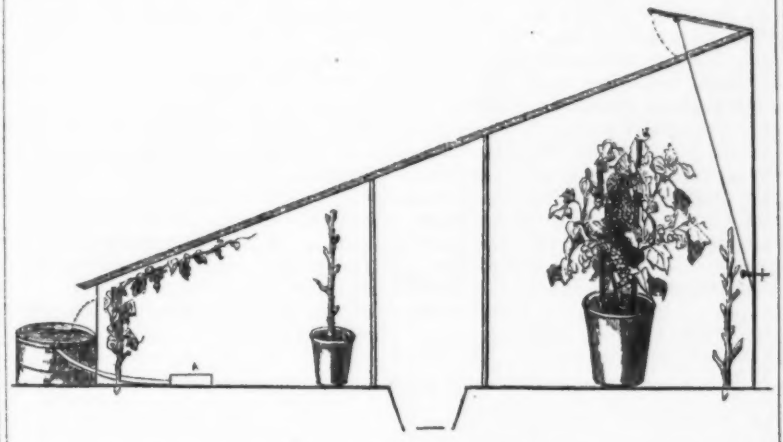
BUILT BY DR. GEO. PEPPER NORRIS, NEAR WILMINGTON, DEL.

The house is a lean-to, 40 feet long by 13 wide, 8 feet high at the back and 3 feet in the front, with a walk 2 feet wide and 18 inches deep in the centre, and a door in each end. The house points south south-east; the back, front, and north sides are made by setting cedar posts three feet in the ground and squaring them on one side, to which are nailed one-inch plowed and grooved floor-boards, making the back and north side tight enough to exclude frost, but sufficiently open to admit some air through the joints in the boards, which I think advantageous. The roof and other end are made of hemlock, 3 by 4 rafters, between which are one-inch pine strips grooved to let in the glass, which is 10 by 12 size, 4th quality; 4 two feet square and 2 four feet square ventilators in the roof; and 4 two feet wide and 10 feet long ventilating sash hung on the front plate, together with the two sash doors, complete the ventilation.

The top ventilators are raised and lowered at pleasure by means of an

iron rod shown in the sketch, which at its lower part is pierced with holes and fastened by means of a nail to the back posts. The border is 20 feet wide, running under the entire house, and extending 3 feet 3 inches beyond the front and back, except at one end of the house, where the soil is simply incorporated with wood ashes for the purpose of experiment.

The border is three feet deep, under-drained with rough stones, on top of which are layers of oyster shells, 50 bushels of bones, several cart-loads of coach-makers' trimmings, leather straps, (thus getting the old horse devoid of the putrid carcass;) the top strata consists of the old soil of an adjacent pasture field thoroughly incorporated with well-rotted manure, wood ashes, sand, charcoal, and leaf-mold, the whole of which had been prepared a year previously and suffered to be thoroughly intermingled. The border was prepared last autumn. At each end of the house are oil hogsheads,



(200 gallons,) from which the rain-water is conducted into the interior tanks, thus having always a supply of soft warm water.

The rough cost was, lumber, $40 ; labor, $50 ; glass, $22 ; hardware, putty, hinges, nails, &c., $8 ; making a cost of $120, exclusive of border and vines. It might have been constructed cheaper by avoiding the plane ; but being in the immediate vicinity of the dwelling, this was undesirable. 40 vines are planted in this house, 32 of the 40 being Black Hamburghs, 2 West St. Peter's, 2 White Frontignan, 1 Black Frontignan, 1 White Nice, 1 Muscat of Alexandria, 1 Golden Hamburgh. The front row are planted 18 inches from the front posts, and intended to be trained up 14 inches from the glass, with the intention of stopping them when they have proceeded half way up the rafters.

The front row will be pruned on the long rod renewal system, i. e., having two canes, allowing one to bear a full crop, then cutting it down to a single eye, staking the crop the next year from the other rod, thus getting the fruit from the new rod each year.

The back row will be trained up on vines one foot from the back posts, on the spur system ; the front vines being kept in check, and the length of rafter given will prevent shading. This season it is expected to fruit fifteen pot vines, which are now standing on the front border, as shown in the sketch, with the expectation of removal to back border when the front permanent vines may be encroaching, and there allowed to ripen their fruit. To many, this would be an agreeable feature, as the characteristic of the American is to *have the fruit the first year.* This plan of house is well calculated for pot trees or vines, and was partly erected on account of its correspondence with a proposed house exclusively for orchard culture. The interior has had several coats of white-wash, with which sulphur had been intermingled ; this and the cost of the posts, which were got out of the woods during winter, are not included in the estimate. A wooden lattice-work is placed at the bottom of the walk. The house, as far as tried, works admirably ; the advantage of the two sized ventilators is perceived, as in cool clear days the small ventilators only may be opened, and as the heat increases the larger ones may be raised. Should more ventilation be thought necessary, sliding doors may be cut in the back walk : for an orchard house this would be required. The house presents a very good appearance ; and were another to be erected, no change would be made. To some the pitch of the roof will appear too low; but as we expect during the heated term to keep the glass clouded either by white washing externally, or by the painting to resemble frosted glass internally, we have no fears of the vines burning. The glass is all 4th quality, 10 by 12, and is remarkably good for the price ; no better would be desired. A tank for liquid manure water will be an indispensable adjunct, and has been already provided for. The vines came from Ferguson's and Bright's, Philadelphia, were carefully planted, and are starting beautifully. More anon.

[The above is a good and cheap plan, and within the means of a good many who ought to have graperies. We should put in fewer ventilators rather than more, and are far from regarding the roof as being too flat. With a proper degree of moisture in the house, (a condition not consistent with free ventilation,) there is no danger of burning the vine, even with the thermometer at 175° ; a proposition which may startle some of our friends, but which we know to be true.—Ed.]

THE SPERGULA PILIFERA.

We have lately had a number of inquiries in relation to the *Spergula pilifera*, and present the following from the French, as containing, in a brief compass, about all that is known of its adaptability to ornamental purposes. We also present a drawing of the plant, which gives a good idea of its general appearance, except that it is much more compact as we saw it. Mr. Sargeant, we believe, has had it out during the past winter, and we may therefore soon expect to hear something specific in regard to its hardiness.

"The Spergula pilifera is a very pretty miniature plant, not exceeding two inches in height (including the flowers) ; its numerous small stems, which are hidden in a mass of fine acicular, very short leaves, form a compact, velvety turf, of the most beautiful green, and quite similar to moss.

"From the midst of the leaves, the flowers show themselves during nearly the whole of summer and autumn. Small, starry, very white, and slightly fragrant, they succeed each other in great quantities, and in fading leave no disagreeable traces.

"Of very rapid growth, the smallest portion, planted in the spring, forms during the current year a tuft from ten to twelve inches in diameter; it consequently covers the ground rapidly, and appears perfectly adapted for forming edgings, turf walks, or lawns, of the most pleasing effect. It can also probably be used advantageously in ornamenting rock-work, &c. It grows well in the shade, and experiments already made lead to the belief, that it will thrive equally when fully exposed to the sun, preserving its verdure and remarkable freshness of appearance.

"A mossy rural turf, requiring no mowing or cutting of any kind, which may, indeed, be said to need no care, requires no eulogy, and by these qualities alone recommends itself to amateurs.

THE SPERGULA PILIFERA

"Its propagation is very easy, either by seed or by the division of the stands, which may be separated almost infinitely; a small package of the seeds, or a few tufts of the plant, are therefore sufficient for a stock. The sowing should be in the open air, whether in pots or in the ground. The seed being very small, should be very slightly covered, or it is sufficient to leave it on the surface of the ground, in which case it should be kept in the shade. The young plants should be pricked out into the open ground, where they are to remain, at a later period. If it is intended to form an edging, the plants should be placed at a distance of from eight to ten inches apart. If a turf walk or a lawn is to be made, the plants should be placed checkerwise, at distances of six or eight inches. The spread of the plants is so rapid that they will soon form a continuous carpet, compact and inimitable.

"As to the quality of soil required, this plant does not appear to be difficult, and it is probable that it will thrive almost anywhere in a soil somewhat compact, provided there are a few inches of vegetable mold. If the soil is not naturally compact, it should be made so by using the roller.

"Mr. Lucien Georges, to whom is due the initiative of employing this plant in the ornamentation of gardens, gave it the name of *Sagina acicularis* in distributing it in France and England. In England it was supposed to be the *Spergula pilifera*, and it is by this name that it has been announced in the catalogues and brought forward in the horticultural jour-

nals, which have eulogized it very highly. In consequence of this name being that under which it appeared in the horticultural world, we preserve it; it is proper to say, however, that it is neither *Sagina acicularis* nor *Spergula pilifera*, but rather, according to Professor Decaisne, *Spergula* or *Lagina subulata*, an indigenous species in several parts of France."

ROTATION IN PLANTING.

BY ARCHIBALD VEITCH, NEW HAVEN, CONN.

The opinion that trees, vegetables, and cereal grains do not succeed when planted more than once on the same piece of land in immediate succession, has its foundation in experience; and the advantages derived from a close adherence to the rotation system, whether in the garden or on the farm, is so evident as to need no defence; and when it is not in some measure followed, failure and disappointment are the inevitable results. But while this is true, it seems as if the injurious effects which flow from pursuing an opposite course, had in some instances been overstated, and reasons assigned which, to say the least, are unsatisfactory.

It has been affirmed, for example, that "wheat will not succeed after wheat, dahlias after dahlias, even by manuring the ground;" whereas wheat has been often grown in this way without disappointment; and dahlias have been planted on the same land four years in immediate succession, and, what is noteworthy, they grew better and produced finer flowers the last year than they did the first. Every gardener knows that onions can be grown on the same land for a series of years without any sensible diminution of crop. Still it is admitted such examples may be exceptional, and insufficient to prevent any one from following the alternate method of raising crops.

What is true of the Garden and the Farm, is also true of Fruit and Forest Trees, and abundant evidence could be adduced to show that by planting any of those in immediate succession, they do not succeed well. One remarkable instance of this came under my observation some years ago. A gentleman in the neighborhood of where I lived owned an extensive plantation of old trees, consisting chiefly of Scotch Fir and Norway Spruce; these were cut down, and shortly after the land was again planted, as well as an additional breadth which had previously been under wood. The consequences were, the young trees on the site of the old plantation died by the thousand, while those on the additional piece did as well as could be wished. At the time the old trees were cut, they were mostly sound and growing rapidly, and many bidding fair to equal those famed of old,

> "Hewn on Norwegian hills, to be the masts
> Of some great admiral."

Apple, Pear, and Plum-trees have often failed when planted in a similar way, and it is more than likely that the cause or causes, in every instance, had been the same.

How to account for such failures seems no easy task, and yet some facts

can be stated which tend in some measure to remove the difficulties that stand in the way of rightly understanding their cause.

The opinion is entertained by some, and, indeed, such a one was expressed by an eminent fruit-grower before the Scientific Convention in this city some time ago. It was stated that "the Apple and the Pear did not succeed after the Apple and the Pear, because the first time had exhausted the land of those elements necessary for their growth." Now there can not be a doubt but that all trees exhaust the land in which they grow to a certain extent; but do they exhaust it so much as to account for the succession trees refusing to grow at all, or, in some instances, lingering in a weak and diseased condition? That such a proposition is insufficient to account for the failure of the forest trees stated above, is evident from the fact that they were in the high noon of their prime, and certainly taxing the capabilities of the soil greatly more than what the saplings, their successors, did or could do. If the land was incapable of supporting the young trees, how account for its ability to sustain the old? For the sake of illustration, take the case of the Cedars of Lebanon. Speaking of those trees, M. Lamartine, in 1832, says, "These trees diminish in every succeeding age. Travellers formerly counted thirty or forty; more recently seventeen; more recently still, only twelve. There are now but seven. These, however, from their size and general appearance, may be fairly presumed to have existed in Biblical times." It is according to analogy to suppose that had those trees been cut down any time during the last thousand years, and the same sort, or any of their congeners, planted instead, they would not have succeeded any more than those already referred to; and, besides, if such failures are attributable to the exhaustion of the soil, then we are forced to the conclusion that it takes a Cedar tree more than a thousand years to accomplish that which a Turnip or a Beet can do in one.

The only rational way of accounting for such phenomena is, to refer to the agency of fungous matter in the ground consequent upon the decomposing roots and old tree stumps. That such matter is present in cases of failure is exceedingly probable, and the roots of the young trees in its neighborhood, or in immediate contact with it, are likely to become diseased and finally perish. Should there be any doubts about fungi in the first stage of development poisoning the roots of trees, there can not be any when in more advanced stages; as the mycelium or spawn, which consists of elongated cells, often tangled and web-like, can be seen without the aid of glass or microscope, spreading over and destroying the roots of growing plants. The opinion seems to be generally entertained that such fungi grows only upon putrescent substances and the tissues of decaying roots. In its normal condition it may be so; still it is not singular to see the mycelium attached to roots still alive. The observing gardener may see many of the injurious effects of those subterranean enemies of vegetation, as they affect many of the crops under his care. Its blighting influence may especially be seen in strawberry-beds, when by mistake they have been mulched with spent tanner's bark, saw-dust, or chips of wood.

To be practical, as regards the planting of young trees on the site of old orchards, the only remedy which can be recommended is, that care should be taken to remove every old root; and that can be done only by trenching the land as deep as the roots of the old trees had descended; or, as a matter of economy, it may be trench-plowed. Whichsoever method is adopted, it

ought to be thoroughly done. The roots, as they are gathered, as well as the branches of the old trees, should be preserved for the purpose of burning on the land: and while doing this, as much of the land itself should be burnt as can conveniently be done. This, with the ashes of the wood, and bits of charcoal, make an excellent compost, which should be thoroughly worked into the ground as deep as it has been plowed or trenched, as well as a sufficient quantity of well-rotted manure. Should these conditions be complied with, the consequences would be, the land, which some might consider exhausted, would be restored to its pristine purity and productiveness.

[The above is an interesting topic; and while we agree with Mr. V. in regard to the mode of overcoming the evil, the common theory on the subject by no means accords with our own views.—Ed.]

HOW TREES GROW.

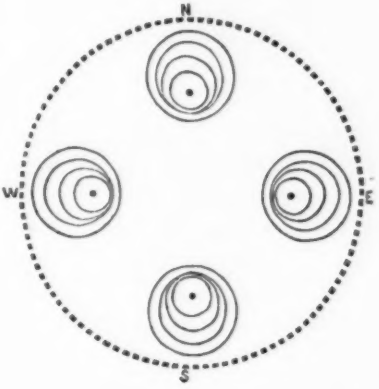
"That is a fine piece of Oak," remarked an experienced and very intelligent person the other day while looking at the section of one of the old principals of the chapel roof of Hampton Court; "how fast it grew on the south side!" "How do you know that to have been the south side?" was the reply. "Oh! you will always find that it is the south side of an Oak tree which grows fastest." It was not the first time that such an assertion had met our ears; but we had imagined the opinion to be confined to a few very old-fashioned gardeners and woodmen; in this we were mistaken. Let us then endeavor to disabuse the horticultural and arboricultural mind of what is surely a great error.

Timber is formed by the action of leaves, and in no other possible manner. That is a law to which there is no exception; and there we take our stand. The quantity of timber will be in direct proportion to the area of leaves; that is to say, six leaves having a surface of twelve square inches will have as much timber-forming power as twelve leaves having the same surface. Such being the case, to say that a tree has always most timber on the south side is the same as saying that a tree has most leaves or a greater area of foliage on the south than on any other side. Is that true? Certainly not.

A tree grows near the north wall of a high house; on the side next the house, namely, the south side of the tree, there is least timber, while on the opposite or north side there is most. The following figure represents a circular wood, with four trees standing on its circumference at the cardinal points, the interior of the wood being crowded. At N the principal formation of timber will be on the north side of the tree; at W on its west side, and at E on its east side. If a tree grows singly, without any hindrance to its regular development, it will have the same quantity of foliage on each side, and the production of timber will be as uniformly concentrical as could be represented by successive circles drawn by a pair of compasses. In all these cases the excess of timber on the south side does not take place; no doubt at the point S on the circle, which represents the south, most timber

will be formed on the south side, but without any greater difference than will be found at E, N, and W. Now this we take to be an exact statement of what happens in the cases supposed; and if so, the popular notion to which we have alluded is disposed of.

The reason why there is most timber at N, E, W, and S on the above circle is, not that trees are exposed to one point of the compass more than another, but that the letters represent the outside of the wood. On that side branches form most abundantly, leaves are larger, and the roots have more space than they can have on the side next the interior of the wood. Most wood is formed at S because there is most timber-forming power in action there, not because it faces the south; as, indeed, is plainly shown at



N, which has least timber on the south side. Let any one living on the south coast examine the trees that first catch the sea spray, and we will engage that he will find, without an exception—unless the sea spray is inoperative, as happens to Pinasters, Evergreen Oaks, and some others—that the smallest quantity of timber is on the south side. For there the branches are broken by gales, the buds are nipped by salt, and the leaves are perpetually perishing under the influence of oceanic action.

Doubtless it often happens that the south side of a tree has most timber, owing to a variety of local causes, especially exposure to cold, cutting northerly winds acting during the spring upon their side. But it is evident that the excess of timber in such a case is not due to the aspect being southern, but to the impossibility of timber being formed on the northern side, owing to injury arising out of the causes we have mentioned. Were the injurious influences to proceed from the southward, then there would be most timber on the north side.

To some this little explanation may seem trifling; but even if the matter itself deserved to be so considered, that can never be a waste of time which

establishes the minutest point of truth. In gardening most especially, where false inferences are so common and injurious, it is of the first importance to seize upon every opportunity of showing the difference between what is termed *post hoc* and *propter hoc;* that is to say, between an accidental occurrence and a necessary consequence.—*London Gardener's Chronicle.*

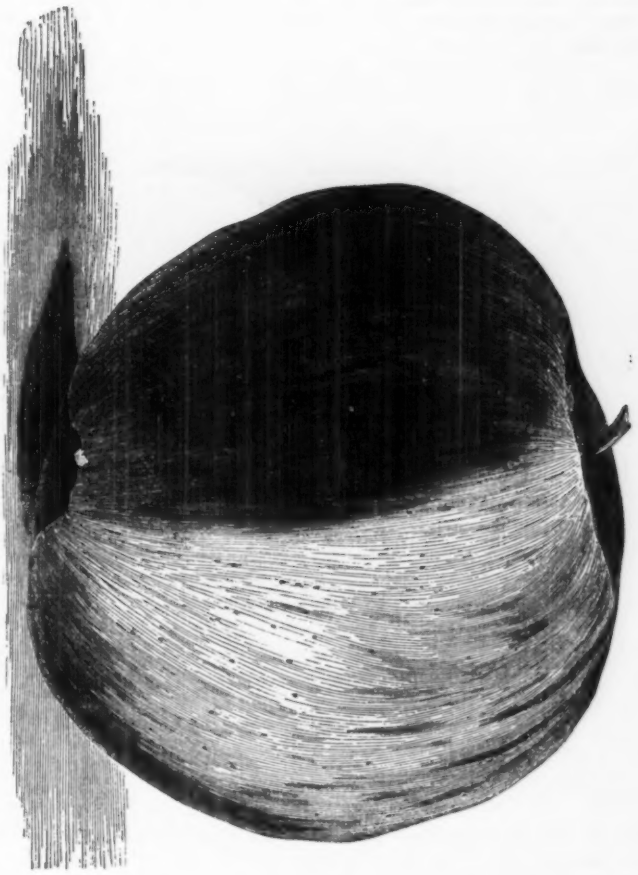
NEW YORK PIPPIN APPLE.

BY D. L. ADAIR, HAWESVILLE, KY.

The best apple we have in southwestern Kentucky, southern Indiana, and Illinois, I think, is, without doubt, the apple generally bearing the name at the head of this article. The name is, no doubt, a synonym, and Western pomologists have puzzled themselves no little to give it a proper one. In some nursery catalogues it is represented as identical with Monmouth Pippin, a New Jersey apple, smaller, and only second or third-rate, and not near so good a keeper. Some make it identical with Newark Pippin, a smaller, but first-rate yellowish green apple, which is dissimilar in almost every respect, and which is here a fall or early winter apple. I first received the New York Pippin under the name of Funkhouser, which name it received from a German gentlemen of that name in Illinois, who, it is said, first introduced it there; and I notice that at the late session of the Illinois State Horticultural Society, after mature deliberation, they voted that it should be henceforth known as the *Carolina.* Against this I beg to enter my protest, as we have here, along the Ohio Valley, an apple bearing that name which is very popular and very good, but quite unlike the fruit under consideration. The Carolina is a deep red apple, regularly conical, and not so large. The trees are as dissimilar as the fruit. The wood of the Carolina is a very light yellow, while that of the N. Y. Pippin is very dark, and at the forks of the young shoots, and where the spurs put out, there are enlargements on the wood, sometimes as large as a boy's marble, while the Carolina has nothing of the sort on it.

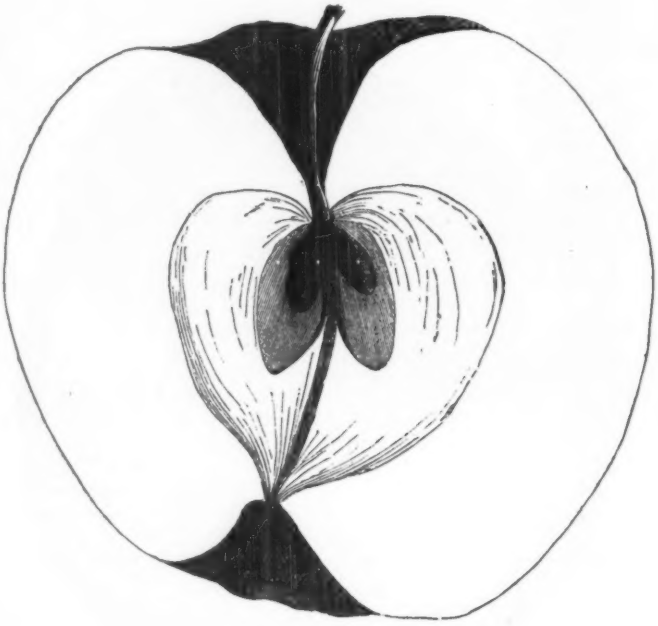
I am told that there is no apple by that name known in New York, and, so far as I know, it is not described in any fruit book; but as it is our best winter apple, I should like to know its true name. I therefore send you a drawing of it, and the following description:

Fruit roundish, flattened, often conical, irregular, one-sided, angular, with one or more prominent ribs, large to very large; the specimen from which the drawing was made weighed seventeen ounces—weight generally eight to seventeen ounces;—*color* greenish yellow, almost entirely overspread with light red, and over that irregular deep red stripes, often breaking into blotches and dashes at the base; brownish green specks at intervals of a quarter to half an inch all over the fruit;—*stem* medium, rather slender;—*cavity* deep, generally triangular, irregular, greenish russety to the surface;—*calyx* large, open;—*basin* wide, deep, furrowed;—*flesh* white, slightly tinged with yellow, tender, subacid, aromatic;—*skin* thick, tough, and leathery;—*seeds* large, dark brown, plump, with an enlargement on one side of the small end;—*quality* "very good" to "best;"—*season*, October to June.



NEW YORK PIPPIN APPLE.

It is the best bearer I know of, not excepting the *Jennetting*; it seldom or never fails to bear a good crop, which is owing to its having a peculiarity that I have never noticed in any other apple, which is this: in the spring it sets large clusters of bloom buds, but only the outer circle expand while the others remain dormant, and in case the first bloom set fruit and escape frosts, those reserve buds wither and fall off; but in case of any fatal accident to the first bloom another circle expands, and even though the bloom be destroyed twice or thrice, there is still a chance for fruit.



NEW YORK PIPPIN APPLE.

[We do not remember any apple around New York answering to Mr. Adair's description. At first we thought it might be the Twenty Ounce, but the description will not answer. The description and drawing both answer more nearly to the Monmouth Pippin, which is here a large and fine apple. We should be better able to judge if Mr. Adair would send us a specimen in its season. Mr. A. gives good reasons why it should not be called Carolina, and we hope they will be heeded.—Ed.]

THE NEGLEY PEAR.

(See frontispiece.)

BY JAMES S. NEGLEY, PITTSBURGH, PA.

Upwards of fifty years ago my grandfather leased a lot in East Liberty, to a man by the name of Wolff, who, at that early period, was noted for his skill and taste in Horticulture. He soon covered his lot with fruit-trees, which was quite an undertaking at that time; but he did not remain to enjoy the fruit, but sold his lease to another person. The pear-tree in question stood near the house, and thus escaped the accidents which destroyed many of the other trees. It still remains, a fine old healthy tree, never failing to produce a crop of its delicious fruit. As to its origin, there is no doubt but it is a seedling; this is substantiated by the opinion of those persons who were familiar with the trees when planted. Another very strong evidence is the fact that there are no other trees of a similar age of the same variety in the neighborhood. My grandfather had over fifty acres in orchard at that time, containing every variety of fruit which could be obtained, among which was every other variety of fruit in Wolff's garden, except this pear. Now, if its quality had been known, or it had been a grafted tree, he would have had it, or it would have found its way into some of the old pear orchards of the neighborhood. But it remained in its isolated position, little known, until within twelve or fifteen years, although grafts had been taken off as early, perhaps, as twenty-five years ago. The tree which produced the specimens sent to Mr. John Jay Smith last summer, grows in my uncle's garden, in rather an unfavorable situation for the pear. It was the only variety out of fifty which bore last season. It has not failed to produce a crop since it commenced to bear, though I fear we have injured it this season by removing all the young wood for buds and grafts. The following brief description of the tree and fruit may be interesting:

Tree vigorous, upright, pyramidal, and very symmetrical in growth; comes early into bearing; grows free on both pear and quince stock.

Wood very clean reddish brown, stout, and short-jointed; fruit-buds very abundant, sometimes covering all the young wood.

Foliage abundant, of a rich reddish green; remains on the tree until late in autumn.

Flowers large, not always in compact clusters. *Fruit* above medium, though some seasons very large, obtusely obovate, nearly regular, sometimes a perfect pyriform. *Skin* a rich lemon, shaded with bright crimson, quite free from specks or imperfections. *Flesh* white, tender, moderately melting, very juicy, but firm. *Flavor* rich saccharine, sprightly, vinous, highly perfumed, and delicious. *Core* of medium size. Hangs a long time on the tree; does not rot prematurely; is in season from last of August to the end of September. It commands a higher price than any other pear in this market of its season.

This pear was exhibited by me at the Ohio Pomological Congress, when held in Cincinnati. The president, Mr. Ernst, mistook it for the Flemish Beauty, until he had tasted it. It was named the Negley Pear by the Fruit Committee of the Pittsburgh Horticultural Society the season before; it then obtained a special premium, and last season was considered by the Fruit Committee of the Agricultural Society as the best pear on exhibition.

Mr. Chas. Downing wrote me in September, saying that it was the most beautiful pear he ever saw, but did not think the flesh as melting as could be desired, which was, no doubt, the case with those sent him, as they were pulled before being ripe, and they lose flavor if ripened off the tree. I would hesitate to recommend this pear so highly, for fear of having my motives questioned, were it not so highly esteemed in this neighborhood, and the character given by me so easily sustained by reference.

LOVE OF HOME—RURAL EMBELLISHMENTS.

BY C. N. BEMENT.

THERE are few things better calculated to attach us to our homes—where the social virtues love to congregate, and to dispense their blessings—than rural embellishments. This is true whether we apply the term to our neighborhood, or individual abode. The public grounds about the great cities of Europe, some of which comprise an area of five hundred acres, are the theme of general admiration, the theatres of healthful exercise and recreation, and the sources of high intellectual enjoyment. The lesser towns, villages, and cities, even of our own country, owe more of their charm and interest to the trees and plants which embellish their squares, streets, and grounds, in the eye of a man of taste, than to any ostentatious show of brick and mortar; more to the beauties of nature than to the works of man. Nay, the highest efforts of human intellect are in vain put in requisition to imitate the handiwork of the Creator. And when we come down to suburban residences, and even to the unostentatious abode of the farmer, how are their beauties heightened, and their value enhanced, by a screen of ornamental trees and a well-kept garden.

Loudon informs us, that in travelling from Strasburg to Munich, he passed through a continued avenue of fruit and forest trees, planted on both sides of the highway, for more than one hundred miles. Who that has visited our beautiful city of Poughkeepsie, or that has passed through New England in summer, has not admired in some of the villages the beautiful trees with which they are in a measure enshrouded.

As to the effect of planting upon the beauty of the landscape, the late Mr. A. J. Downing, in a well-written article upon this subject, justly remarks: "Many a dreary and barren prospect may be rendered interesting, many a natural or artificial deformity hidden, and the effects of almost every landscape improved, simply by the judicious employment of trees. The most fertile country would appear but a desert without them, and the most picturesque scenery in every part of the globe has owed to them its brightest charm. Added to this, by recent improvements in the art of transplanting, the ornamental planter of the present day may realize, almost immediately, what was formerly the slow and regular production of years."

As to the effect of planting and gardening *upon the body and mind* of those who engage in these pursuits, we offer the following extracts from Loudon's Suburban Gardener; and we recommend them to the special notice of all gentlemen who are troubled with dyspeptic or hypochondriac affections.

"There is," says our author, "a great deal of enjoyment to be derived from

performing the operations of gardening, independently of the health resulting from this kind of exercise. To labor for the sake of arriving at a result, and to be successful in attaining it, as cause and effect, is attended by a certain degree of satisfaction to the mind, however simple or rude the labor may be, and however unimportant the result obtained. To be convinced of this, we have only to imagine ourselves to be employed in any labor from which no result ensues, but that of fatiguing the body, or wearying the mind; the turning a wheel, for example, that is connected with no machinery, or if connected, effects no useful purpose; the carrying a weight from one point to another and back again; or the taking a walk without any object in view, but the negative one of pursuing health. Thus it is not only a condition of our nature, that in order to secure health we must labor; but we must also labor in such a way as to produce something useful or agreeable. Now, of the different kinds of useful things produced by labor, those things surely which are living beings, and which grow and undergo changes before our eyes, must be more productive of enjoyment than such as are mere brute matter,—the kind of labor and other circumstances being the same. Hence a man who plants a tree, a hedge, or sows a grass-plat in his garden, lays a more certain foundation for enjoyment, than he who builds a wall or lays down a gravel walk; and hence the enjoyment of a citizen whose recreation is at his suburban garden, must be higher in the scale than that of him who amuses himself in the plat round his house, with shooting at a mark, or playing at bowles.

"One of the greatest of all the resources of enjoyment resulting from the possession of a garden," continues our author, "is the endless variety which it produces, either by the perpetual progress of vegetation which is going forward in it to maturity, dormancy, or decay, or by the almost immeasurable kinds of plants which may be raised even in the smallest garden. Even the same trees, grown in the same garden, are undergoing perpetual changes throughout the year; and trees also change in every succeeding year relatively to that which is past; because they become larger and larger as they advance in age, and acquire more and more their characteristic and mature form. Independently of the variety of change resulting from the variety of plants cultivated, every month throughout the year has its particular operations and its products; nay, it would not be too much to say, that during six months of the year, a change takes place, and is perceptible in the plants of a garden every day; and every day has in consequence its operations and its products."

In conclusion: A bountiful Providence has given the vegetable kingdom for our sustenance, employment, and highest intellectual enjoyment; and has scattered these elements of happiness, with a profuse hand, everywhere within our reach. It is left with us to enjoy them in a greater or less degree as we learn to appreciate their value, and exert ourselves to apply them to their proper use. The brute is content to satisfy its wants. Man, the lord of creation, should have a higher aim—because he has higher sources of enjoyment than the brute, and higher duties to perform; he is the husbandman appointed to take care of and nurture the great vineyard, and to carry out the wise purposes of the all-bountiful Giver.

A taste for flowers, and the external rural embellishments of the houses and grounds, we are happy to say, is everywhere springing up. Besides, its strong tendency to multiply attachments to home is among the best safe-

guards of virtue, and, furnishing sources of delightful recreation, it is highly conducive to intellectual and moral improvement.

Our advice to the young is to cultivate a taste for rural embellishment, as a preventive of bad habits, and as the source of substantial and innocent pleasures.

THE PANSY.

BY J. H. FRY, NEW BRIGHTON, STATEN ISLAND.

The beauty of this plant can only be fully appreciated when seen under good cultivation; for the Pansy, above all other plants, *must* have a rich, light soil to develop its good qualities, both as regards size of flower and depth of color. Experience shows that to grow Pansies in what might be called good soil for other plants, but too loamy for this, only produces small flowers and thin petals. Having seen the same variety under both treatments, I am convinced of the fact. Half a dozen good varieties are plenty to start with. Plant them out in a situation not exposed to the mid-day sun; save seed from the largest and most distinct flowers as early in the season as possible. Although there are a great many varieties under this name, yet it is somewhat difficult to keep them through the summer season. The best method for obtaining a good crop of plants and flowers in the spring is, by sowing seed at the proper time, and relying entirely upon seedlings every season; for, depend upon it, you will get from young, vigorous plants finer and a much larger quantity of blooms, than from old stunted plants that are kept from year to year; and as variety is charming, that you will obtain also. If seed are sown the latter part of July, or beginning of August, in a frame, good plants will be produced by October. Prepare another frame with well-rotted manure and leaf-mold, press it well, and fill to within six inches of the glass. Set the plants out six or eight inches apart each way. In November they will commence to bloom, and keep on through the winter if well protected from the frost. In March and April they will flower very freely. As soon as the weather will permit, plant them out in a half-shady situation, and during the months of May and June they will be interesting objects.

The best plan for obtaining seed for another season is by leaving a few plants of the largest and most distinctly marked flowers in the frame, where you can bestow a little extra care on them by watering when necessary, and also for gathering the seed; for, if left too long, the capsules will burst, and you will be likely to lose most of it. Even if grown as a frame-flower only, like the Neapolitan violet, the Pansy will pay for the trouble.

[With his communication, Mr. Fry sent us some specimens of his flowers, which were good evidence of his skill and the value of his mode of growing the Pansy.—Ed.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

WE are fearful that some of our friends will think that we have neglected them; but the simple fact is that we have lately been subjected to so great a pressure that we have been unable to do what we could wish. Hereafter, however, we hope to be able to do better. We have received the proceedings of several Horticultural Societies, and thank our friends for sending them. We shall in the future endeavor to make room for such matters promptly, whenever they are of general interest.

MR. BRIGHT'S NEW BOOK.—Bright's Single Stem, Dwarf, and Renewal System of Grape-Culture, adapted to the Vineyard, the Grapery, and the Fruiting of Vines in Pots, on Trellises, Arbors, &c.—We have read Mr. Bright's book with peculiar interest, as setting forth, on the subject of "inside borders," a principle which we have thoroughly tested for many years, and know to be sound. We have already so fully endorsed it elsewhere, that it would seem to be unnecessary to say any thing further here. We have experienced no small difficulty in getting a good hollow wall built, and are therefore inclined to regard Mr. Bright's detachment an improvement, since it secures the border from external influences under all circumstances. In his article in our present number, Mr. Bright has supplied what is a defect in his book, viz., an abundant supply of water in tanks which shall be entirely under control. Another new feature in Mr. Bright's work is the "single stem renewal system." This, to us, is entirely new, and is enforced with so many good arguments, that we bespeak for it a fair and thorough trial. By confining the energies of the vine to the production of one thing at a time, we should naturally expect to obtain that thing in perfection, whether it be wood or fruit; and this is what Mr. Bright proposes to do. There is one particular, however, in which our practice would differ from Mr. Bright's. We do not like vines from layers, and we should therefore prepare plants from eyes or cuttings, and with these replace the old vines as circumstances should demand. Before replacing any vines, however, we should cut the old ones down to within a foot of the ground, and rely upon forcing a dormant bud; and we should expect to succeed in so doing in a large proportion of cases, and get a good growth. If we failed to do this in a satisfactory manner, we should then resort to replanting. But this is a matter which does not detract from the merit of Mr. Bright's "single stem renewal system," the great point which he here makes being the production of more and better grapes than can be obtained by any of the systems now in use. We hope that this renewal system, whether applied to graperies or vineyards, and also the inside borders for graperies, will meet with a fair and impartial trial.

ROESSLE'S CELERY BOOK.—How to Cultivate and Preserve Celery. By Theophilus Roessle, of the Delavan House, Albany, N. Y. Edited, with a Preface, by Henry S. Olcott.—Mr. Roessle has for some years been known as a successful grower of Celery, and the present volume gives us the details of his practice. In some respects we should be loath to follow it. For example, he says Celery seed should be sown an inch deep. We doubt whether one seed in a hundred will vegetate at that depth; certainly not very speedily. The better and more usual plan is to sow the seed about a quarter of an inch deep. His manner of treating the plants in the hotbed we consider defective. It is a good plan, as he recommends, to let the weeds first come up; but he greatly errs in spading over the beds after destroying them, for he thereby insures the growth of a second crop, and his bed is no better than at the beginning. We have tried this too often not to be familiar with the result. Our practice is to disturb the soil as little as possible in destroying the weeds: the celery (or whatever seed may be sown) then comes up comparatively clean. The system of blanching by two earthings is quite common among gardeners; those, however, who wish to produce extra large and fine heads, repeat the earthing a number of times; but this repeated earthing Mr. Roessle condemns. There must be some merit in a plan, however, which produces fine, crisp, solid heads weighing from seven to nine pounds each. The plan recommended for preserving the plants is a good one, and has been very successful in the hands of the author. The secret of his success, however, in Celery growing, consists, in our opinion, in the thorough manner in which his trenches are prepared; and his views on this point should be carefully read. The volume is handsomely printed in large type, and the editor's finished pen is manifest on every page. The work is published by the author, but may be had of Saxton, Barker, & Co., 25 Park Row, New York, for $1.

OLD JAVA COFFEE-POT.—Some considerate friend has placed on our table (a good place for it, by-the-by) an "Old Java Coffee-Pot." We mean to put the coffee through according to directions, and expect to be able to report "flavor" in our next. In the mean time, Bartlett and Lesley will continue to manufacture it at 426 Broadway, New York.

NEW SEEDLING CAMELLIA.—We have received from Mr. Buchanan a very fine Seedling Camellia, named *Mrs. Buchanan*, which we shall hereafter describe with a drawing.

DIOSCOREA BATATIS.—Mr. Chorlton has sent us some very fine roots of the Dioscorea, weighing two and a half pounds each. We have eaten nothing better in this way.

ISABELLA WINE.—We are indebted to Mr. Bartholmew, of Westfield, Chatauque Co., N. Y., for samples of Isabella and Blackberry Wines, the latter being very good of its kind. The Isabella is a real wine, without any foreign addition whatever, is as clear as a crystal, with a fine aroma, and comes fully up to the mark of a first-rate article.

THE HUMAN VOICE; its right Management in Speaking, Reading, and Debating, including the Principles of true Eloquence, together with the Functions of the Vocal Organs; the Motion of the Letters of the Alphabet; the Cultivation of the Ear; the Disorders of the Vocal and Articulating Organs; Origin and Construction of the English Language; proper Methods of Delivery; remedial Effects of Reading and Speaking, &c. By the Rev. W. W. Cazalet, A. M., Cantab. New York, Fowler and Wells, 308 Broadway.—This is by no means the least meritorious of the useful and popular works issued by the Messrs. Fowler and Wells. While dissenting from some of the views of the author, we find so much that is useful, and that ought to be more generally known and understood, that we give the work a hearty commendation. Though it seems to have been written mainly to meet the wants of special cases, we know of no class of readers who would not be greatly benefited by giving it a careful perusal.

ADDRESS delivered before the New York State Agricultural Society, at the Annual Meeting, Albany, February 9, 1860, by Abraham B. Conger.—We are indebted to Secretary Johnson for a copy of the above Address, received too late, however, for notice in our present number. We shall read it hereafter.

THE HISTORICAL MAGAZINE, and Notes and Queries concerning the Antiquities, History, and Biography of America. April, 1860.—An able publication, devoted exclusively to our domestic history and antiquities, and embracing among its contributors the best historical writers of the day.

BROOKLYN HORTICULTURAL SOCIETY.—The Spring Exhibition of this society was held at the Athenæum on the 11th, 12th, and 13th of April. The exhibition will take its place among the best which the Society has held, and in a pecuniary point was successful beyond what was anticipated. Had the result, in this respect, been otherwise, the citizens of Brooklyn would, for some years at least, have been deprived of a means of enjoyment which they have been quite too tardy in appreciating.

In all floral exhibitions there is some one feature which gives character to the scene, and on this occasion it was the *Azalea*. Large, skilfully grown, well covered with bloom, diversified in their colors, they doubtless met the requirements of the most fastidious taste; and while we have no fault to find in these respects, we should be glad if hereafter some of our Azalea growers would abandon the low, flat, spreading form now almost universal, and adopt a shape somewhat approaching a pyramid or a shaft. It would give greater diversity of form, and thus add vastly to the interest of the exhibition, while at the same time it would give additional scope to the gardener's skill. Among the "solid men" of the exhibition may be mentioned Messrs. Van Voorst, Langley, Menand, Hoyt, Patrick, Rogers, Low, &c., represented by their respective gardeners. Of the specialties of these gentlemen we shall have something to say on another occasion. Too much praise cannot be bestowed upon the President, J. W. Degrauw, Esq., to whose unflagging energies and enthusiasm the public are indebted for these beautiful floral exhibitions.

Mr. Fleming, gardener to C. Van Voorst, Esq., of Jersey City, exhibited a rare collection of plants, and their fine condition showed him to be a careful and skilful man. Among the most noteworthy, we may mention a number of variegated leaved Begonias; six Caladiums, the finest being Chantinii and argyrites; Medinella magnifica; Rudgea leucocephala, a new plant with large clusters of white flowers like a tuberose; five Orchids in bloom, viz., Oncidium lucidum guttatum, Dendrobium aggregatum, D. Griffithii, Odontoglossum cordatum, and Cattleya Mossiæ, the last a splendid plant; Rhapala corcovadensis, a splendid evergreen plant, and believed to be the largest in the country; Guzmannia picta, Maranta vittata, Aralia reticulata, Ananassa sativa variegata, Dracæna indivisa, several fine Epacris and Azaleas, and an Anœctochilus setaceus, the last, in our opinion, the finest plant in the room.

Mr. Menand, of Albany, exhibited a large collection of plants, embracing a number of rare and finely grown specimens, among which the following may be mentioned: Dammara Brownii, a new plant from Australia; Caladium Chantinii, Maranta eximia, M. vittata, and M. regulis; Rogiera cordata, Blumen cratiliense, Viburnum nitidum, a splendid specimen nearly eight feet high, and covered with bloom; Acacia pubescens hybrida; several beautiful Ericas; Andoninia capitata; Melaleuca fulgens; Pimelea decussata and P. Hendersonii, beautiful specimens; Medinella magnifica; Tradescantia discolor vittata; Dendrobium nobile; a large number of Ferns, and many other fine and rare plants.

From Mr. Gordon, gardener to E. Hoyt, Esq., Astoria, a splendid collection of large and well grown Azaleas, such as Iveryana, extranii, optima, amœna, Beauty of Europe, &c.; Epacris campanulata rubra grandiflora; Eriostemon buxifolia and E. intermedia; Aphelexis purpurea macrantha; Boronia tetrandra and B. Mollinii; four beautiful Ericas, including ventricosa coruscens and coccinea minor; Burchelia capensis, and other fine things.

From Mr. Murray, gardener to J. Patrick, Esq., Brooklyn, a collection of finely grown plants, embracing several beautiful Azaleas; Eriostemon intermedia; Lachenaultia formosa, Tropœolum tricolor, Chorozema Henchmannii, one of the best grown plants in the room, and very pretty; Boronia pinnata, and a number of other good things.

From Mr. Hamlyn, gardener to W. C. Langley, Esq., Brooklyn, a very choice collection of plants, among which were Marantas, Crotons, Lycopodiums, Ferns in great variety, Azaleas, Begonia ricinfolia maculata, Phœnix dactylifera, Bahmeria argentea, Tradescantia discolor argentia, Pitcairnia punicea, Cissus discolor, Rhapala corcovadensis, Farfugium grande, some very beautiful Ericas, and a number of other plants.

The other collections contained mostly the same kinds of plants, and it is not necessary to repeat the names. Mr. Rauch showed a large collection of plants, including Roses, Azaleas, Camellia A. J. Downing, (very fine.) Begonias, Ericas, Aralia quinquifolia, Aspedistria elatior variegata, Boronia crenulata, Selaginella paradoxa, Bilbergias, and many other pretty things.

Mr. Dailledouze exhibited a fine lot of Monthly Carnations, some of the best being La Paon, Indispensable White, La Pureté, De Beranger, Grenadier, Haten, Le Grandeur, Variegata. Also a fine bloom of the new Rose America, and the best collection of Pansies we have ever seen.

Mr. Hudson presented a very good design for a small garden, in working order.

Mr. Weir exhibited Pot Plants, Bouquets, &c., and several pots of Spergula pilifera, a beautiful moss-like plant proposed as a substitute for grass on lawns.

From Messrs. Poynter & Foddy, cut flowers, Roses, &c. From Mr. Templeton, very fine Cinerarias; some good ones also from Mr. Egan. From Mr. Park, a pair of Hand Bouquets. From Mr. Zeh, a basket and collection of fine pot plants. From Mr. Egan, a plate of Snap Beans. From Mr. Schmeig, Lettuce and Radishes. From Mr. Jones, some Hothouse Grapes.

Mr. Hochstein exhibited a finely executed design for a Diploma in water colors, very appropriate for a society of this kind. We append a list of the successful competitors, which must complete our remarks for the present, with the announcement that the Society will give another exhibition about the second week in June.

Mr. Menand took *first* prizes for the best collection of plants, $18; for best Cacti, $6; best specimen plant, $4; best Ericas, $4. *Second* prizes for Greenhouse plants, $8; for Labeling, $1.

Mr. Fleming took *first* prizes for best four Stove Plants, $8; best six variegated leaved plants, $6; best single do., $3; best two Orchids, $5; best single do., $3; best cut Camellias, $3; special prizes for ornamental leafed plant, $2, and Caladiums, and Begonias, $2.

Mr. Rauch took *first* prizes for best six Roses, $5; best Labeling, $2. *Second* prizes for collection of plants, $10; for Flower Basket, $3; for three Azaleas, $3.

Mr. Hamlyn took *first* prizes for best Ferns, $8; best four Ericas, $8; best two Ericas, $5; best four Gloxinias, $4; best 6 Pinks, $3. *Second* prizes for variegated leaved plant, $2; for single Azalea, $2.

Mr. Gordon took *first* prizes for best eight Greenhouse plants, $12; best six Azaleas, $10; best single Azalea, $4. *Second* prizes for four Ericas, $6.

Mr. Murray took *first* prizes for best three Azaleas, $5; best single Rose, $3. *Second* prizes for four Greenhouse plants, $5; for single Erica, $2; six cut Camellias, $2.

Mr. Weir took *first* prizes for best Parlor Bouquet, $5. *Second*, for two Greenhouse plants, $3.

Mr. Zeh took *first* prizes for best two Greenhouse plants, $5; best Chinese Primrose, $1. *Third*, for Hand Bouquets, $2; and Basket, $2.

Mr. Reddy took *first* prizes for best three Scarlet Geraniums, $4; best single Fuchsia, $2.

Mr. Jones took *first* prize for best two bunches of Grapes, $6. *Second*, for specimen plant, $2.

Mr. Templeton took *first* prizes for best four Cinerarias, $4; best cut flowers, $5. *Second*, for six Azaleas, $6; for three Scarlet Geraniums, $2.

Mr. Tanner took *first* prizes for best three Fuchsias, $4; best six Hyacinths, $3; best Annual, $1; best six heads of Lettuce, $1; Bush Beans, $1.

Mr. Schmeig took *first* prizes for best double Chinese Primrose, $1; best six stalks of Rhubarb, $1; best Radishes, $1.

Messrs. Dailledouze & Tellar took *first* prizes for best four Auriculas, $3; best four Monthly Carnations, $3.

Messrs. Poynter & Toddy took *first* prizes for best twelve Pansies, $1; best Flower Basket, $5.

Mr. Walter Park took *first* prize for best Hand Bouquets, $4.

Mr. Hudson took *second* prize for Hand Bouquets, $3.

Mr. Egan took *first* prize for best Sea-kale, $1.

Mr. Buchanan was awarded a special prize for his fine seedling Camellia, Mrs. Buchanan.

In conclusion, we congratulate the members of the Society upon their happy success, and hope it may act as a stimulus for increased exertion for the future. We would suggest that hereafter the names of the exhibitors be attached to their plants. We have endeavored to credit the proper owners, but doubtless have made some errors because of this absence of names.

THE AUSTIN STRAWBERRY.—Mr. Carpenter has shown us some plants of this new Strawberry, which are stout enough to bear berries of almost any size. We know Mr. Carpenter so well, that we do not believe he would have anything to do with it unless he knew it to be what it is represented. Plants will be sent to our office when in fruit, where it may be seen; and we shall then tell our readers just what it is in plain English.

DEATH OF MR. ERNST.—The death of this well-known Horticulturist is announced in our Western exchanges. Can any of our readers furnish us with a brief notice of his life?

NEW PLANTS.—Mr. Buchanan, of New York, has recently received an accession of new plants, a list and description of which we are now preparing.

PATENT OFFICE SEED.—We learn that no more seed (at least for the present) will be issued from the Patent Office. We hope that this condition of things will continue until a wiser policy is adopted than that which has heretofore marked the distribution of seed by the government at Washington.

EVERBEARING MULBERRIES.—A. F. can safely plant Downing's Everbearing. It is a very fine fruit, and hardy around New York and along the Hudson. We have never seen the fruit of the others alluded to, and therefore cannot speak of them from personal knowledge.

DEATH OF HON. B. V. FRENCH.—We regret to learn that this distinguished Horticulturist died at his residence in Dorchester, Mass., on the 10th inst., aged 68. He was one of the prominent members of the Massachusetts Horticultural Society, and for many years has been known as an enthusiastic promoter of horticulture.

A good mattress is so important an accessory to sound sleep, the best restorer of tired nature, that a good one within the means of the mass of people ought to be regarded as a blessing. Something of this kind is manufactured by Mr. Kittle, 476 Broadway, N. Y., at a very reasonable price; and we feel convinced that those who have once used it would not willingly be a night without one. If any class are entitled to the blessing of good sound sleep, it is certainly those who delve in the ground. Articles of this kind should be more commonly advertised in Horticultural magazines.

THE BELLE LUCRATIVE PEAR.—Mr. Wright, writing from Oberlin, says, "I see in the last number Solon Robinson mentions Dr. Grant's list of the best twenty varieties of Pears, in which list the Belle Lucrative, decidedly the richest Pear we know of in this excellent Pear region, is not mentioned. How is this?" Though not mentioned in the list itself, it is added at the end as a good substitute for either of the autumn varieties. We think so highly of it as a dwarf, that in selecting a list of three kinds we should make Belle Lucrative one of them.

THE YOUNG FARMER'S MANUAL.—Messrs. Saxton, Barker, & Co. have in press a large 12mo volume, with this title. It details, in a plain and intelligible manner, those operations most essential to the success of the young farmer, giving full instructions for the erection of buildings, fences, gates, &c. An important feature is the "Farmer's Workshop," with ample directions for the selection, use, and care of implements, all of them much neglected subjects. The work will be abundantly illustrated. The author is Mr. S. E. Todd, one of our most intelligent and successful farmers, who understands what he is about. We shall notice the book more fully hereafter.

IN Mr. Eaton's article on Grape-Houses, p. 173, line 17 from bottom, a sentence should begin with the words, "In windy weather," &c., and end with the word "control." On p. 171, line 6 from top, "out" should be "cut."

FRUIT-GROWERS' SOCIETY OF DELAWARE.—At the annual meeting of this Society, held in Wilmington, on March 21, 1860, the following named gentlemen were elected officers for one year:

President, H. F. Askew, M. D. *Vice-President*, Samuel Canby. *Corresponding and Recording Secretary*, Dr. Geo. Pepper Norris.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.—We have received the following circular from this association, and would call special attention to it. The matters it treats of are of general interest, and we hope those to whom it is addressed will respond to it heartily. Mr. John Rutter, of West Chester, Pa., is General Chairman.

The committee for the County of Philadelphia respectfully call the attention of Fruit-Growers to the existence of this Society, the objects of which are to foster and encourage the introduction of new and desirable varieties of fruits, to give a correct and impartial description of them, and to aid in their dissemination.

In order to carry out these praiseworthy objects, we respectfully urge on all who take an interest in this subject, the importance of carefully conducted experiments in hybridizing our native with foreign sorts, and the production of seedlings from such hybrids, as well as from our well-known sorts, both foreign and native.

Beside the production of new sorts, there are doubtless many really desirable fruits already in existence which deserve to be better known; all such will be accurately described in the proceedings of the Society, if well-ripened specimens are forwarded to the committee at the proper season.

We therefore respectfully request all lovers of fine fruits to aid us in furthering the objects of this Society, by imparting such information as they may possess in reference to new fruits, or the improvement or deterioration of the older sorts, as well as the results (successful or otherwise) of any experiments they may have in reference to this object, such as peculiar modes of culture, the application of special manures, diseases, pruning, the destruction of injurious insects, or the preservation of fruits; and if these suggestions are carried out we may confidently anticipate the happiest results from the operations of this Society, not only in the dissemination of new and desirable fruits, but in preventing the dissemination of worthless sorts.

J. E. MITCHELL, *Chairman*, No. 310 York Avenue, Phila.

HARTFORD COUNTY (CONN.) HORTICULTURAL SOCIETY.—At the annual meeting held April 7th, 1860, the following officers were elected for the ensuing year:

President, Gurdon W. Russel, M. D. *Vice-Presidents*, J. S. Butler, M. D., Edward Bolles, A. W. Birge, Hartford; H. W. Mygatt, Farmington; N. W. Stanley, New Britain; Norman Porter, Berlin; Sheldon Moore, Kensington; Salmon Lyman, Manchester; E. A. Halcomb, Granby; H. A. Grant, M. D., Enfield; S. D. Case, Canton; T. C. Austin, Suffield; H. S. Collins, Collinsville; B. F. Seward, Southington; R. H. Phelps, Windsor; Sherman Steele, West Hartford; Wm. G. Comstock, East Hartford; Josiah Atwood, Newington. *Corresponding Secretary*, D. S. Dewey, Hartford. *Recording Secretary*, Mason C. Weld. *Treasurer*, P. D. Stillman. *Auditor*, S. H. Clark.

CATALOGUES, &c., RECEIVED.

Pomona Garden and Nursery Catalogue of Fruit and Ornamental Trees, Vines, and Plants, cultivated and for sale by William Parry, Cinnaminson, Burlington Co., N. J.—A good collection of plants, but the printer certainly was no pomologist.

Dennison's Tree and Plant Labels, in wood and zinc.—These would seem to be a good article, and are offered at a moderate price.

Geo. F. Needham's Descriptive Catalogue of Annual, Biennial, and Perennial Flower Seeds, embracing the choicest American, English, French, and German varieties. Buffalo, N. Y.—A small but choice catalogue.

Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, &c., for sale at the Cheltenham Nurseries, on Oak Lane. Haines & Hacker, Cheltenham P. O., Montgomery Co., Pa.—A nice little catalogue.

Annual Report of the Agricultural Society of New Jersey for the Year 1859.—We have not yet had time to read it, but will notice it in our next.

First Annual Descriptive Catalogue of Greenhouse and Bedding-out Plants, Florists' Flowers, &c. Also, Foreign Grapes, Strawberries, Lawton and New Rochelle Blackberry. Flower Seeds, Vegetable Seeds, and Plants, cultivated and for sale by John Davies, at the East Hill Greenhouse and Flower Gardens, Ithaca, N. Y.—A choice collection, embracing the novelties of the season.

Catalogue of Hardy Grape-Vines and other small Fruits, Ornamental and Fruit-Trees, Shrubs, &c., cultivated and for sale by George Davenport, Dedham, Mass.—Very neat and choice.

HORTICULTURAL AGENCY.—Mr. Daniel Barker has opened a Horticultural Agency at Hartford, Conn. He is a reliable man, and we hope will be duly encouraged.

Hamilton County Fruit Gardens, College Hill, Ohio, A. H. Bailey, Proprietor.—A circular of wholesale prices.

Correspondence.

THE BELLE DE CHOISY CHERRY.—We have received the following letter from Mr. Downing, explaining the omission of this Cherry from the revised edition of the "Fruits and Fruit-Trees of America." The difficulty of making a complete catalogue is so great, that we wonder there are not more omissions.

"Your correspondent, T. E. M., of Chillicothe, O., notices the omission of the Belle de Choisy Cherry in the revised edition of the "Fruits and Fruit-Trees." I can only say that it was not intentional, and I can not account for it. It was either an oversight of my own or of the printer. If another corrected edition should be issued the Belle de Choisy will have its

place, as it is the *ne plus ultra* of cherries as to flavor, although a poor bearer, and will not be grown generally, except by amateurs; yet I have known a few instances where it produced abundantly. Coe's Transparent being a great bearer and nearly equal to it in quality, will in a great measure supersede it. CHAS. DOWNING.

DWARF PEARS—DEEP PLANTING.—*Mr. Editor:*—Your leader, p. 57, 58, I have carefully read, and the second time ran over it to have it fresh in my mind. Being one of the earliest Dwarf Pear growers in Mississippi, and an advocate of the Dwarf, and having to learn all about it from a dear-bought experience, I must, though in sincerity, reluctantly differ with you, yet, at the same time, I acknowledge the truth of all you say. This is "rather blowing hot and cold." But let me explain. I would plant the Dwarf Pear one to three inches below the union, depending upon the quality of land; yet I would prefer to plant no deeper than they grow in nurseries, *if they were grown right.* Just as well to have the Dwarfs die off from too deep planting, as live standing and do no good. I have had Dwarfs budded, or grafted, six to ten inches above earth, planted as my experience and as you direct; after remaining two or three years, some died, some broke off at junction, and many made no growth. I found those did best which had been worked low, particularly a lot I got from Hovey, so worked as to admit the junction to be, say one inch in earth. I then took up all others and put them deeper, so as to hide the Quince entire. I lost some, but on the whole I succeeded better. Since that time I have planted all below surface—meaning the junction. I have trees not over ten to twelve feet high, from which I have gathered some three to five bushels of pears, others of similar age not near as high, nor as thrifty; the D'Angoulême being the best bearer, though not any larger than others.

I have tried to insert the pear graft *on the Quince cutting* before putting out, thinking I might save time and get my tree lower worked. I succeeded with the only one I tried last fall, though it was put out under the north side of a fence and thus protected from the sun. I have some 2,000 cuttings put out, and will in a few days insert grafts on side of cutting without removing, (a little more trouble,) but it will not prevent the quince from growing, and if I succeed it may save one year. I am desirous of putting into orchard several hundred Pear Dwarfs, and will keep myself out of mischief by working them myself.

I insist that nurserymen should work Dwarfs so that they can be planted correctly, (as they grow in the nursery,) which I think will remedy much complaint; for really my experience is against Dwarfs while the Quince is above ground. Yours with respect,

Edwards, Miss. M. W. PHILIPS.

[We must put Mr. Philips down for a good-tempered man, who can discuss a point of difference without losing his patience. Since he agrees with us in the most essential points we made, we will consent, with him, to throw away the badly-worked trees, as being the most speedy method of disposing of the evil. Trees ought by all means to be properly prepared in the nursery: this can not be too strongly insisted upon. We hope he will continue his experiment of preparing the stock before planting, and let us know the result.—ED.]

EDITOR HORTICULTURIST: When a useful invention is introduced into domestic life, it very often happens that its merits are not always understood, and sooner or later we are apprised of some defect, or we are informed that there is another and a more useful article in the market, to serve the same or a better purpose: in such cases ventilation is always useful.

Thus it is in regard to the Saddle and Conical Boiler, recently invented for the purpose of heating with hot water; touching the merits of which I have read two articles in the March and April numbers of the HORTICULTURIST.

Having had some opportunity of seeing that apparatus at work in several places during the past winter, and being the owner of three boilers of a different pattern, now in active use, I ask leave to say a word in regard to it in the HORTICULTURIST.

The principles upon which hot water boilers should necessarily be constructed are few and simple, yet they seem not to be well understood, and are rarely attended to by practical gardeners.

To obtain the greatest amount of heat from a given quantity of fuel, and to retain that heat when obtained *within* the boiler, by retarding its rapid ascent through the smoke pipe and chimney, are matters of the first importance in every heating apparatus of this description. For example, the slightest examination will show that a judicious combustion of fuel is not always obtained in the grate and chimney process of heating our dwellings, and by applying the hand to the flues they will be found to be infinitely hotter than any part of the house intended to be heated, thus carrying away at least three-fourths of the heat produced, without affording much benefit to the house, or its inmates; hence the necessity of stoves.

Count Rumford's improvements in the construction of chimneys did little towards economy in the combustion of fuel, and nothing at all towards retaining the heat when produced. His whole aim was to make a chimney draw well; and this, in many cases, and especially in boilers for horticultural purposes, is too much of a good thing.

Economy suggests to the gardener and horticulturist some means and manner of heating their plant-houses other than the old brick flue system, at the rate of from twenty to fifty tons of coal during six months of the year.

Oxygen, that great supporter of all animal and vegetable life, is the prime element in the combustion of fuel. In the construction of the boiler, its introduction should be carefully provided for, through the grate bars of course; the area of which should be in proportion to the maximum extent of pipes to be heated, and directly from the atmosphere.

It is held by learned chemists and men of science who have elaborately investigated the subject, that the quantity of oxygen necessary to effect complete combustion, so as to produce the best results, should be in due proportion; that too much is as bad as too little,—too much consuming the fuel too rapidly, and driving off the heat—too little producing imperfect combustion, and great quantities of smoke.

The Argand Lamp affords a good example of complete combustion, and the principle it elucidates should not be forgotten in the construction of a heating apparatus. The chief difficulty Argand obviated by his invention, was in producing complete combustion of the oil, so as to keep the flame from smoking; this he effected by making the wick in the form of a ring, instead of the round cotton wick used in the old form of lamp, which was always attended with smoke and smell, because of its small extent of surface to the air. By A.'s invention the flame became a hollow cylinder, with a current of air ascending through the inside, so that its burning surface was more than doubled, and by means of a glass cylinder over the flame, a draught was created—sufficient oxygen supplied—complete combustion obtained—and the greatest possible amount of light yielded.

Rogers' Conical Boiler, introduced in England many years ago, gave satisfaction for a long time, but like the chimneys of our houses, the smoke-pipe and flue being in direct connection with the fire, a great quantity of heat was uselessly carried away. In addition to this defect in boilers of a larger size, the higher portion of the boiler was too remote from the fire to produce the best result; hence it is, that the smallest boiler of this pattern has proportionately greater power than the larger size. The reason of this is the well-known fact, that the relative effect of heat upon substances is in the inverse ratio of the squares of their distances from the fire; for instance, A and B are sitting at a fire; A is two feet distant from it, and B is four; the square of B.'s distance is four times the square of A.'s distance; therefore A is four times hotter than B, though only half the distance from the fire.

The improvement in the Saddle and Conical Boiler under consideration, is the introduction of the saddle within the cone, or rather one cone within another, each holding water, and connected together by small pipes, with sufficient space within the cones to allow the escape of smoke.

Now the advantage here is, the inner cone being completely closed at the top, holds in suspension the light floating particles of unconsumed fuel which would otherwise rush up the chimney, until its combustion is completed, assuming that a due quantity of oxygen is admitted: and a further and most valuable advantage secured is, this inner cone, at all times during action, is a cap full of intense heat which it retains, and retards in its ascent up the chimney.

Sufficient heat—slow combustion—requiring little attention—with little smoke, are the objects to be attained in the construction of every heating apparatus for horticultural purposes.

The Saddle and Conical Boiler referred to combines these qualities in a greater degree than any other boiler I have seen in use.

Brooklyn, April 18, 1860. B.

[We have several articles on the "boiler subject," which we shall print from time to time. Thus far they are written with good temper, and this we shall insist upon as a condition.—ED.]

NOTES ON THE GROWTH OF DIFFERENT VARIETIES OF THE PEAR ON QUINCE STOCK.—Last summer, in looking over a small orchard of Dwarf Pear-trees planted in the spring of 1857, I made the following hasty notes in regard to the vigor and general appearance of the different varieties. From the trees having had only three seasons' growth since planting, and there being in most cases but two or three of each variety, these notes must possess much less value than were it otherwise; and the future will no doubt show that some kinds which are now growing beautifully and promise to be perfectly successful on the Quince, are not to be relied upon for permanent trees; for it is now very well known that many kinds of the Pear will grow on the Quince as well as could be desired a number of years, and then, for some unaccountable reason, cease to thrive, and in a year or two, despite all the care of the most experienced cultivator, "go the way of all the earth." It is, indeed, this fact, as well as planting on improper soil, negligent pruning, and want of cultivation which has so frequently caused those who have not had sufficient experience in the matter, to raise the cry of "humbug" against Dwarf Pear-trees. We have now a short list of varieties which have been thoroughly tested, and proven to be perfectly adapted to the quince stock; and no person who has a proper soil need fear failure in planting these kinds, if he will only give them the necessary attention afterwards. Dwarf Pear-trees have become altogether too deeply rooted in the gardens and affections of almost all intelligent horticulturists of this country to need any defence from me against the attacks of those few who may have failed to be successful with them from local causes, their own ignorance, or neglect. I think that the most convincing proof of their value is to be obtained by visiting any of the fruit-gardens of this country where they have been introduced and carefully cultivated—looking at the beautiful "pyramids" loaded with fruit—generally fairer and better than can be grown on the "standard"—and then going to the nurseries, and seeing to what an extent the dwarf trees are propagated there in order to meet the rapidly increasing demand. One can not then fail to be convinced that dwarf trees are something of an "institution" after all.

I did not intend, when I commenced this article, to say anything which might look like an attempt to reopen the "Dwarf Pear War," but I could not resist the temptation to say a few words for dear favorites of mine which I have sometimes seen most shamefully slandered.

Having myself often felt the want of information in regard to the growth of different varieties of the Pear on Quince stock, I am led to make the following imperfect notes on the subject public, hoping in that way to induce others also to give their experience; so that in a short time we may have reliable information in regard to the habit of growth, and success or failure on quince, of almost every variety cultivated in the country. Such information would certainly be very valuable, especially to those who may be planting large specimen orchards, and of course desire to know what varieties to set on quince and what on pear stock.

We need very much a list of the pears cultivated in this country, classified under the heads of

"those which do remarkably well on quince," "those which thrive moderately," and "those which should not be dwarfed unless double-worked." It is to be hoped that the "Horticultural Societies" will take this matter in hand, and give us a complete list as soon as possible.

The following are the notes as taken last summer. The ground on which these trees are planted is a strong clayey loam, with a clay subsoil; it is quite moist, though drained so that water does not stand about the roots. Before planting it was deeply plowed with a three-horse plow; never has been subsoiled, though probably it would have been much better for it. The trees were carefully planted, and had a heavy mulching of long manure, which has been renewed every year since. The ground about them has been kept free from weeds and grass with the cultivator and hoe, and the trees have had a systematic pruning every spring, and some slight, though very little, "pinching in" during the summer. It will be seen that of 86 varieties, 78 are now doing well. The general appearance of the orchard is very encouraging.

Louise Bonne de Jersey.—This variety is probably unrivalled for dwarfing. It invariably grows vigorously, making a strong, healthy tree, and producing great crops of very fair fruit. The upper shoots should be shortened severely, particularly while the tree is young, as it is inclined to run up, and not develop the side branches sufficiently. Of over one hundred trees of this kind, there is not one which is not perfectly vigorous and healthy.

Duchesse d'Angoulême.—This is another of those kinds which seem perfectly at home on the quince; always grows freely, forms a handsome tree, and produces great crops of very large and handsome pears, which are of much better quality than those of the same variety on the standard. Every tree of this variety is doing well.

Beurré Diel.—Another of the best varieties for the quince, equal in almost every respect to the preceding. Trees all growing finely. A few specimens produced this year.

White Doyenné.—This old favorite is one of the best, where the fruit does not crack; though, unfortunately, it is getting to be very uncertain in that respect even in the favored "valley of the Genesee." It makes a very symmetrical pyramid with about as little care as any other variety. Trees of this all doing well.

Pratt seems to be well suited to the quince. Trees growing vigorously, and forming handsome heads.

Jalousie de Fontenay.—Of three trees planted, two are looking yellow and making little or no growth; one is doing well.

Church.—Doing remarkably well so far; making handsome and thrifty trees; none better.

Bartlett.—This universal favorite is rather uncertain on the quince, unless double-worked. Some trees will do as well as one could wish, growing and fruiting finely, while others with the same treatment can not be made to thrive. It is also very liable to be broken off at the junction of the pear with the quince stock. Of two planted in this orchard, both grew finely; one was blown off by the wind this season, the other is as thrifty as could be desired.

Beurré Gens.—Growing thriftily. Makes a beautiful pyramid.

Baron de Mello.—One of the most thrifty. Makes a handsome, symmetrical tree. Fruited this year.

Beurré de Waterloo.—Two trees planted; both died out the second and third season. Said by some to succeed on the quince.

Beurré Clairgeau.—Doing very well. Fruited this year.

Summer Franc Real.—This variety always does well. The trees are thrifty and form symmetrical heads.

Lawrence.—Two trees planted, and both of them doing as well as any on the ground. Said not to be reliable on the quince.

Beurré d'Anjou.—Two trees planted, both of which grew well. One of them was broken off this season; the other is very thrifty.

Osband's Summer.—Growing well. Makes a handsome tree.

Madeleine.—Growing well, but rather loosely. Requires close pruning to keep it in good shape.

Easter Beurré.—This is rather an irregular grower, sending out strong shoots at random, as it were, making it difficult to get a well-formed tree. It is a peculiarity of this kind to grow slowly for the first year or two, after which it is as vigorous as most varieties. Trees of this all doing well.

Woodstock.—One of the most thrifty. Makes a symmetrical pyramid. Fruited this year.

Stevens's Genesee.—Doing well.

Josephine de Malines.—Quite thrifty.

Vicar of Winkfield.—As usual, one of the most vigorous. This variety always grows and bears remarkably well on the quince. It is one of the best for market purposes.

Glout Morceau.—Another remarkably fine variety for dwarfing, making a most beautiful and vigorous pyramid, with very little care. Does not fruit well until the trees have attained considerable age.

Swan's Orange.—A very strong grower. Makes a fine pyramid.

Brandywine.—Growing exceedingly well. One of the best on quince.

Doyenné d'Eté.—Doing finely. Fruits early.

Beurré Giffard.—A loose, open grower. Requires close pruning to keep it in shape. Trees all doing well.

Rostiezer.—A very rampant, straggling grower. Requires close pruning to keep it filled up.

Doyenné d' Hiver d'Alençon.—Growing finely, and making a beautiful pyramid.

Beurré d' Hardenpont.—Growing well.

Comte de Lamy.—Quite thrifty.

Rousselet Stuttgart.—Very thrifty. Makes a beautiful tree.

Marie Louise.—A crooked, straggling grower, but doing well.

Brown Beurré has not grown well.

Golden Beurré of Bilboa.—Growing finely. Makes a handsome tree.

Seckel.—Doing very well. Makes a well-proportioned tree.

Oswego Beurré.—Flourishing finely. Seems to gain in vigor as the tree increases in age.

Beurré Goubalt.—A remarkably strong grower.

Cabot has not done well. Of two trees, one is dead, and the other making but a feeble growth.

Canandaigua.—Quite thrifty.

Hosen Shenck.—Doing well. Shoots long and slender.

Oneida.—Very thrifty. Forms a well-proportioned tree.

Ananas.—Very vigorous.

Kirtland.—Growing thriftily, and making a very handsome tree.

Beurré Capiaumont.—Remarkable for its thrifty and symmetrical growth.

Ananas d'Eté.—Doing only moderately well.

Des Nones.—Does not appear to succeed very well.

Bloodgood.—Growing well.

Bergamotte d' Esperine.—Flourishing finely, and making a good pyramid.

Beurré d'Aremberg.—Only moderately thrifty.

Beurré d'Amalis.—A vigorous, though rather crooked grower.

Howell.—One of the best growers. Makes a handsome tree.

Kingsessing.—Very thrifty indeed. Makes a fine pyramid.

Beurré Diller.—Doing moderately well.

Triomphe de Jodoigne.—A remarkably vigorous grower on quince.

Doyenné Sieulle.—Growing well, and forming a handsome tree.

Fondante de Malines.—Doing moderately well.

Parsonage.—Growing well.

Beurré Superfin.—Moderately thrifty.

Beurré Kossuth.—Not very vigorous.

Theodore Van Mons.—Very flourishing.

Van Mons' Leon le Clerc.—Growing very finely. One of the most symmetrical trees in the orchard.

Forelle.—Very thrifty.

English Jargonelle —Not doing well.

Delices d'Hardenpont.—Succeeding very well indeed.

Passe Colmar.—One of the most vigorous.

Urbaniste.—Very thrifty. Forms a beautiful head.

Nouveau Poiteau.—Growing very rapidly. Makes a very symmetrical tree.

Pennsylvania.—Doing well.

Van Assache.—Growing moderately.

Bezi de Montigny.—Very thrifty.

Bergamotte Cadette.—Flourishing finely.

Pinneo.—Growing moderately well.

Bonne de Zees.—Quite thrifty.

Pius Ninth.—Very successful.

Zepherine Gregorie.—A very thrifty tree. Forms a fine pyramid.

Lodge.—Doing well.

St. Michael Archange.—Very fine.

Tyson.—Not succeeding well.

Long Green.—One of the most vigorous. Makes a handsome tree.

Soldat Laboreur.—Doing very well indeed.

Doyenné Goubalt.—A remarkably vigorous grower.

Buffum.—One of the most vigorous. Forms a handsome head.

Sterling.—Growing moderately.

Beurré Langlier.—Very thrifty indeed.

Among the varieties which have been thoroughly tested, and may always be relied upon for thrifty and productive trees, are Brandywine, Belle Lucrative, Beurré d'Amalis, Buffum, Beurré Langlier, Beurré Diel, Duchesse d'Angoulême, Doyenné Sieulle, Easter Beurré, Glout Morceau, Louise Bonne de Jersey, Nouveau Poiteau, Pound, Urbaniste, Vicar of Winkfield, and White Doyenné where it does not crack.

The following varieties are pretty generally known to be successful on the quince, but perhaps it will do no harm to mention them again. Some of them will occasionally flourish finely, but they can not be relied upon for permanent trees. Beurré Bosc, Beurré Rance, Dix, Flemish Beauty, Gansel's Bergamot, Marie Louise, Paradise d'Automne, Sheldon, Winter Nelis.

C. M. HOOKER.

MR. EDITOR:—Will you give a novice some information how to construct something small and cheap on the south side of a dwelling, to be heated by some hot water apparatus, in which he can propagate grape-vines, &c., &c., in pots?

I should be greatly your debtor if you could spare the space to give me directions so plain that I (who live away back in the country, and never saw anything of the kind) could go to work and make one.

If this is asking too much, can you tell me where I can get the requisite knowledge?

Manlius, Ontario Co., N. Y. Yours truly, A SUBSCRIBER.

[We find a great many in want of just such information as "A Subscriber" asks for. He will find in the February number, and also in the present one, something to the purpose; and in our next we hope he will find some plans just suited to his particular case.—ED.]

ED. HORTICULTURIST:—The past winter has been extremely variable in this locality; the greatest degree of cold indicated by the thermometer was two degrees below zero; notwithstanding vegetation has suffered very much. I am cultivating the New Rochelle, Dorchester, and our local variety of the blackberry, and find them all three entirely killed down to the ground. Such a thing has never occurred with me since cultivating them before. In future I will adopt the same system with them that I have pursued with the tenderer raspberries, such as Brincklé's Orange, Fastolf, &c.: that is, lay them down and cover with soil. Young grape-vines of the Delaware and Rebecca (two years planted) are injured a little in their extremities only; the same may be said of Cassady. Kilvington, Brincklé, Raabe, Lenoir, Bland, and some other sorts I find killed and dry down to earth line.

Mary Ann, To Kalon, Canby's August, York Madeira, Garrigues, Concord, Hartford Prolific, Ohio, Diana, &c., are entirely uninjured, with their buds green and fresh to their extremities

Red Lion, Del. Yours truly, JOHN DIEHL.

[Information like the above possesses a peculiar interest in reference to the hardiness of particular kinds of fruits in different localities, and we should be glad to have more of it. We can by and by make up an interesting chapter of comments from it.—ED.]

ED. HORTICULTURIST:—While writing I may as well add a few words that I have wanted for long to send you in regard to shipping perishable fruits to a distance. A year or more ago, the HORTICULTURIST contained a wood cut of a "fruit protector," a patented article, designed to guard soft fruits against the jarring of railroad transportation. The chest containing the fruit was suspended by India-rubber straps. Last summer I used a much simpler and more effectual contrivance for the transportation of strawberries from this place to Chicago, 474 miles by railroad. The result was entirely satisfactory, the fruit arriving in perfect condition; time thirty hours. The fruit was picked very carefully into pint tin cups, the depth of which was equal to the diameter. These cups were placed, not on the bottom of the chest, but on a false bottom, which played freely in the chest, and rested on four or six spiral wire springs, such as are used for making spring mattresses, and costing a dollar per dozen. The number of springs was varied according to the weight of fruit packed in. The chests were made of such dimensions as to receive just so many cups each way, so as to allow barely a free play, with no extra room for jostling: on the top of the first tier of cups, narrow and thin strips of wood were laid, and another tier piled thereon, so in succession for four or five tiers. On top of the whole rests a vessel or box for holding ice, four inches deep, and of the same length and width as the false bottom. This is made of wood, except the bottom, which is of common stove-pipe iron, nailed to the wood and secured against leaking by white lead. In the top is a hole for introducing the ice, with a close-fitting cover. This box, with its charge of ice, rests on the topmost tier of cups, and rides with them on the springs. A lid, with hasp and padlock, shuts down over the whole. To prevent rude handling, stout trunk handles are placed on the ends of the chest. A better arrangement than this could not be desired. The whole load danced to every touch, and the fruit was relieved from all jolting. No air-holes were found necessary; but appeared rather to be injurious on trial. If the cups would bear covering with a tin cap, like a mustard box, or a blacking box, it would better guard against any accidental overturning of the chest. Mr. Peabody says the fruit will speedily spoil, if thus confined. With ice I do not believe it will; but this remains to be tried. The liability to loss by careless handling, tilting, and upsetting the chests was the only difficulty experienced.

Jackson, Tenn. Yours truly, CHARLES S. DOD.

[We should think the above arrangement would insure the safe carriage of fruits for a long distance, and commend it to the attention of our readers. But are tin cups the best that can be used?—ED.]

MR. EDITOR :—Having seen a communication in your valuable journal for March, from Mr. Bizzell, respecting a new mode of pruning the Grape-vine, I beg leave to state that I have pursued the same system with success on Grape-vines under glass, with the exception of leaving but two clusters on a shoot. I also practise a modification of it by sometimes cutting back the shoots to four eyes, when they have failed to produce fruit in the first instance, and I seldom fail to get one bunch from some of them, in which case I rub off the remainder.

The Vines are grown on the double-spur system, by which means the wood for bearing during the ensuing season is carefully laid in, and pinched at the proper time.

It will thus be seen that there is no danger of injuring the vine; in fact, it has a tendency to strengthen next year's bearing wood. It can also be practised on the long rod system, when unproductive, as the buds are generally double, when both may be allowed to grow, and, if neither show fruit, one can be operated on as above. I have never observed the vines to bleed to any excess from this pruning, nor is there any such danger after the leaves are fully developed, which is the proper time to cut back the shoots. It may naturally be inferred that the fruit produced by cutting back must ripen considerably later than that first set; but with some kinds, such as Muscat Alexandria, when in a cold house, this will be found an advantage, as at that period the weather will be warm, and, in consequence, the fruit better set. The bunches will not be as large as those first set, but there will be no difference in the size of the berries. Yours, respectfully, JOHN EGAN.

New Brighton, S. I., April, 1860.

[We are glad to learn that this system of pruning has already been applied to grapes under glass, the only place, we suspect, where it can be of any use to us at the North. It would seem, from Mr. Egan's statement, that the process is not especially injurious to the vine; and as it helps to prolong the grape season, it will doubtless prove to be of advantage, when applied to the Grapery.—ED.]

Editor's Drawer.

CITY LIFE COMPARED TO THAT IN THE COUNTRY.—Edward Everett lately delivered an Address before the New York State Agricultural Society, at Buffalo, from which we make the following too true extract. It deserves to be carefully read and preserved :

"In acknowledging, as I do most cheerfully, the important relations of city life and commercial pursuits to the entire social system of the country, I leave of course out of the account —I have no words but of abhorrence—for the organized conspiracies, swindling, and plundering which exist side by side with the legitimate transactions of the stock exchange. It is not one of the least perplexing anomalies of modern life and manners, that while avowed and thus far honest gambling (if I may connect those words) is driven by public opinion and the law, to seclude itself from observation within carefully tyled doors, there to fool away its hundreds, perhaps its thousands, in secret—discredited, infamous—blasted by the anathemas of deserted, heart-broken wives and beggared children—subject at all times to the fell swoop of the police—the licensed gambling of the broker's board is carried on in the face of day; its pretended sales of what it does not own, its pretended purchases of what it does not expect to pay for, are chronicled in the public prints to the extent of millions in the course of a season, for the cruel and dishonest purpose of frightening innocent third parties into the ruinous sacrifice of *bona fide* property, and thus making a guilty profit out of the public distress and the ruin of thousands.

"I do not claim for agricultural life in modern times the Arcadian simplicity of the heroic ages; but it is capable, with the aid of popular education and the facilities of inter-communication,

of being made a pursuit more favorable than city life to that average degree of virtue and happiness to which we may reasonably aspire in the present imperfect state of being. For the same reason that our intellectual and moral faculties are urged to the highest point of culture by the intense competition of the large towns, the contagion of vice and crime produces in a crowded population a depravity of character, from which the more thinly inhabited country, though far enough from being immaculate, is comparatively free. Accordingly, we find that the tenure on which the land is owned and tilled—that is, the average condition of the agricultural masses—decides the character of a people. It is true that the compact organization, the control of capital, the concentrated popular talent, the vigorous press, the agitable temperament of the large towns, give them an influence out of proportion to numbers; but this is far less the case in the United States than in most foreign countries, where the land is held in large masses by a few powerful landholders. Divided as it is in this country into small or moderate-sized farms, owned, for the most part, and tilled by a class of fairly-educated, independent, and intelligent proprietors, the direct influence of large towns on the entire population is far less considerable than in Europe. Paris can at all times make a revolution in France; but not even your imperial metropolis could make a revolution in the United States. What the public character loses in concentration and energy by this want of metropolitan centralization, is more than gained, by the country, in the virtuous mediocrity, the decent frugality, the healthfulness, the social tranquillity, of private life. I trust I do full justice to the elegant refinements, the liberal institutions, the noble charities, the creative, industrious, the world-encompassing energy, of the cities; but the profuse expenditure of the prosperous, the unfathomed wretchedness of the destitute, the heaven-defying profligacy of the corrupt, the insane spirit of speculation, the frantic haste to become rich, the heartless dissipations of fashionable life, the growing ferocity and recklessness of a portion of the public press, the prevailing worldliness of the large towns, make me tremble for the future. It appears to me that our great dependence, under Providence, must be more and more on the healthy tone of the population scattered over the country, strangers to the excitements, the temptations, the revulsions of trade, and placed in that happy middle condition of human fortune, which is equidistant from the giddy heights of affluence, power, and fame, and the pinching straits of poverty, and as such most favorable to human virtue and happiness."

MAY, 1860.

THE HORTICULTURIST ADVERTISER.

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" Three do.	25 00
" Six do.	45 00
" Twelve do.	80 00

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Or a General Dictionary of Agriculture and of the Arts, Sciences, Instruments, and Practice, necessary to the Farmer, Stock-Farmer, Gardener, Farrier, &c., &c., Illustrated with numerous plates and cuts (many of them colored) of Animals, Insects, Fruits, Flowers, Implements, &c., &c. 4 Vols., Royal Octavo, half calf. Price $20.

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C. M. SAXTON, BARKER & Co.

DIOSCOREA BATATAS, OR

Chinese Potatoes.

BY MAIL.

The experience of judicious growers in the cultivation of the Chinese potatoes confirms all that has been said in their favor. Wherever they have received the care necessary to their full development, the result has been entirely satisfactory in every respect.

Tubers by Mail, Post Paid, at 25 cents per dozen, $1 50 per 100, $10 per 1000.

☞ Send for our catalogues.

J. M. THORBURN & Co., 15 John Street, New York.

NEW VALUABLE SQUASH SEEDS.

By Mail, Post Paid.

White Leghorn,	per packet,	25 cents.
Mammoth Cuba,	"	25 "
Mammoth Chili,	"	25 "
Imported Lima Marrow,	"	25 "
Sandwich Island,	"	25 "
Fine Hubbard, per lb., $1.50. Per oz.,		20 "
Fine Seven-year Pumpkin,	"	25 "
Japan Apple-Pie Melon	"	25 "

☞ Send for our catalogues.

May. **J. M. THORBURN & Co., 15 John Street, New York.**

NEW GRAPES.

GOLDEN HAMBURGH.—A first class fruit of rich amber color. $2.00 each.

BOWOOD MUSCAT.—Similar to the Muscat of Alexandria, possesing the desirable advantage of setting well, and being superior in the form of the bunch, which is more compact. $2.00 each.

NEW BLACK MUSCAT HAMBURGH, $3.00 each. Does not require more heat to grow and ripen than the Black Hamburgh, a very abundant bearer, handsome, fine shouldered bunches, flesh melting, very rich in flavor, with a high muscat perfume.

TRENTHAM BLACK, $3.00 each. A black grape of most excellent quality, flesh tender, juicy, and remarkably rich and sugary, earlier than the Black Hamburgh, and having the valuable property of hanging late without shrivelling.

JAMES WEIR,

May. **Nurseryman and Florist, Bayridge, Long Island, N. Y.**

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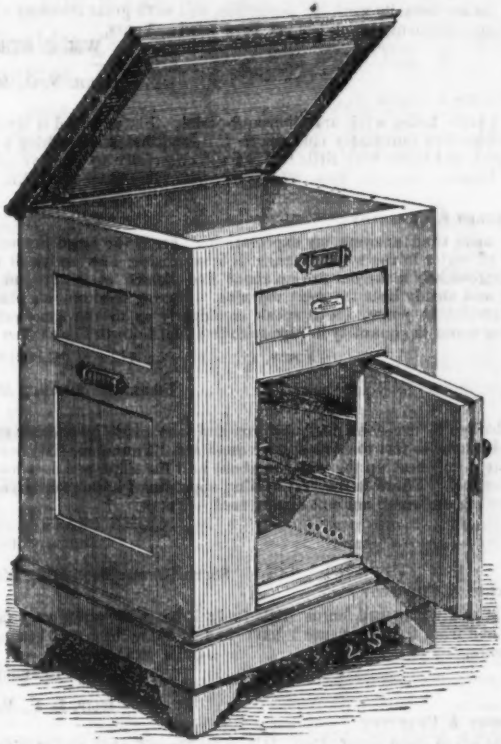
VENTILATING

REFRIGERATORS.



Polar breezes constantly circulate through these Refrigerators, which are warranted to keep Fish, Flesh, and Fruits, each article retaining its peculiar flavor. In fact, it is the only perfect preserver. Made, and for sale at wholesale and retail, by

BRAMHALL, HEDGE & CO.,

442 BROADWAY, NEW YORK.

Weathered & Cherevoy's
PATENT BOILERS & IMPROVED HOT WATER APPARATUS,

For Warming and Ventilating Public Buildings, Private Dwellings, Greenhouses, Graperies, Forcing-Pits, Drying Rooms, &c.

After a thorough test of this Boiler during the past season, we would most respectfully call the attention of Gardeners, Florists, and the Public in general to the following extracts from letters received by us:

NONANTUM HILL, BRIGHTON, MASS., *Feb.* 11, 1860.

MESSRS. WEATHERED & CHEREVOY:

Your little boiler does its work to perfection, and with great economy of coal; it is the best boiler, in my judgment, which has yet been tried. Yours,

WM. C. STRONG, Florist.

RALEIGH, N. C., *March* 12, 1860.

MESSRS. WEATHERED & CHEREVOY:

I have given your boiler a fair and thorough trial. I have tested it through our coldest weather—4° below Zero (unusually cold for N. C.)—and find it everything I could desire; it is easily managed, and burns very little fuel. I will cheerfully answer any reference you may make to me. Yours,

THOMAS CARTER, Nurseryman.

NEWPORT, R. I., *April* 6, 1860.

MESSRS. WEATHERED & CHEREVOY:

Your boiler more than answers my expectations. From the large amount of pipes, and great quantity of water in the wooden tanks, it is surprising how quick it heats up with a little fuel. We generally make our fire up about five o'clock at night, and we can always find a good fire and steady heat the next morning. Having used on this place a boiler of a different construction to yours, I can speak confidently as to the superiority of yours; it will heat up four times the quantity of pipe with less fuel than the one taken out by you.

Yours, ALFRED C. CHAMBERLAIN.

FISHKILL LANDING, *March* 15, 1860.

GENTLEMEN:

Having two boilers in use—one made by you and one made by another manufacturer—I have had a good chance to test their respective qualities. Yours has sixty-seven more feet of pipe upon it, but it will heat up the water in about half the time, and does not consume more than one half the fuel. Yours is the best heating apparatus I have seen or used—that is, for quickness in heating and small amount of fuel used.—Yours,

JOHN PEATTIE,
Gardener to JUDGE KENT.

SOUTH OYSTER BAY, L. I., *March* 17, 1860.

MESSRS. WEATHERED & CHEREVOY:

Your boiler is easily managed, burns little fuel; it heats the water very rapidly, requires little attention, and from the experience I have had, it is the best that has ever been under my charge.—Yours,

JOHN McCORMICK,
Gardener to JUDGE BROWNSON.

ISLIP, L. I., *March* 20, 1860.

MESSRS. WEATHERED & CHEREVOY:

Your boiler has given great satisfaction; it does far beyond what you specified in your contract. There is no trouble whatever with it; it is the quickest in operation, and burns less fuel than any other boiler I have ever used or seen.—Yours,

JOHN ELLIOTT,
Gardener to BRADISH JOHNSON, Esq.

MATTAWAN, DUTCHESS CO., N. Y., *Feb* 6, 1860.

GENTLEMEN:

I am now able to write you in reference to your boiler, having fully tried it. It requires careful attention, from its great power, yet is easily managed, and fully answers my expectations. I think it is capable of heating four times the quantity of pipe now upon it.

Yours, R. B. ANDREWS,
Gardener to JOSEPH HOWLAND, Esq.

May.

WEATHERED & CHEREVOY,

PATENT

BOILERS

AND IMPROVED

HOT WATER APPARATUS,

FOR WARMING AND VENTILATING

Public Buildings, Private Dwellings, Greenhouses, Graperies, Forcing Pits, Drying Rooms, &c.,

AND FOR HEATING WATER FOR BATHS,

NO. 117 PRINCE STREET, NEW YORK,

Between Green and Wooster Streets.

Fig. 1.

Fig. 2.

The Subscribers most respectfully call the attention of Gardeners, Florists, Nurserymen, and the public in general to their new and improved Boiler for the above purpose, for which letters patent have been granted. The cuts show the appearance of the Boiler. Fig. 1 is an outside view. Fig. 2 is a vertical section through the centre.

The arrows indicate the course of the flame and represent the heat passing between the two water chambers on its passage to the flue. There is no brick work whatever to the boiler, the stand which forms the ash pit being made of cast iron, with a ventilator in the door to regulate the draft to the fire. It will be seen from the above cuts that the boiler is two double casings, having two water chambers, connected together at the bottom and top by pipes; the heat radiating from the fire having nothing to obstruct it, strikes with great force against the whole interior surface of the boiler, thus preventing any accumulation of soot or dust. There being no outlet at the top of the inner dome for the gases to escape, they descend, to arise between the two water chambers on their passage to the flue, and are again brought in contact with the fire; by this means the fuel is economized, and a rapid circulation of the water is obtained with a very small amount of fuel.

The boiler presents almost double the amount of heating surface to the fire in proportion to its grates, over any other boiler yet made for the same purpose, and the form of the boiler is such, that the heat becomes absorbed and transmitted to the water previous to its escape to the flue, thus avoiding the great defects that all other boilers are subject to. The fire box is also large enough to receive a sufficiency of fuel to last twenty-four hours; this is an advantage which practical men accustomed to the use of Hot Water Apparatuses will fully appreciate. References will be given as regards its superiority over all other boilers, by applying to the undersigned.

Messrs. W. & C. having had several years' practical experience in the manufacture and construction of Hot Water Apparatuses, feel justified in stating that for effectiveness, durability, with economy of fuel combined, that these Boilers cannot be equaled by any other boiler now in use.

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SHEPARD'S SEEDLING PEAR.

Fruited for the first time in 1852. Received a SILVER MEDAL from the Mass. Horticultural Society. VIGOROUS, HARDY and PROLIFIC.—For further description, see "Downing's revised edition of Fruits and Fruit Trees of America;" Horticulturist, vol. 7, page 215. A limited number of the above trees for sale by the subscriber, packed and delivered in Boston, at $3 each. Those ordering from the South or West, will please inclose gold or stamps. Address

May. **L. W. PUFFER,**
North Bridgewater, Mass.

THE OLD JAVA COFFEE-POT.

(Patented April 5th, 1859,)

IS DECIDEDLY THE BEST COFFEE-POT IN USE.

By its peculiar, yet simple construction, it preserves and distills the rich aroma, and thus secures the full flavor of the Coffee, thereby making better Coffee with one-third less. It is easily managed, and is not liable to get out of order; and it is so simple that an ignorant or careless cook cannot fail to understand and manage it.

THE HIGHEST PREMIUM,

A Silver Medal, was awarded the Old Java Coffee-Pot,

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PRICES FOR TEA OR COFFEE:

1 Quart,		$1 00	4 Quarts,		$2 50
1½	"	1 25	6	"	3 00
2	"	1 50	10	"	4 25
3	"	2 00	16	"	6 75

DIRECTIONS.

Place the handle of the *cold water* cup R over the lower one II; then pour cold water in the cup R until it overflows at F, and fills the lower cup II; then fill the coffee pot half or two-thirds full of hot water, put in the coffee (ground course), and place the condensing cups on as represented; then place the pot on the stove or range to boil five minutes, and while boiling take the upper cup R off, and pour a tea-cup full of cold water into the coffee, to settle it; then place the cover on, and take the whole immediately from the fire.

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The Largest Strawberry in the World.

The following is a correct description: Plant vigorous, foliage very large; foot stalks long and stout; fruit very large, and broadly conical: color, bright crimson; flesh rather firm, mildly acid with a rich and high flavor; flowers staminate; in full bearing about the 25th of June. Some of the berries will measure over two inches in diameter. Twelve picked from a bed without extra selection weighed one pound. We are aware that many new seedling strawberries have been recently offered to the public that have not given satisfaction. We propose to exhibit plants of the Austin in full bearing, in pots, and berries in baskets, from the 15th of June to the 4th of July, at the following places: At Wm. S. Carpenter's office, 468 Pearl Street, New York; office of Hovey's *Magazine of Horticulture*, Boston; office of Moore's *Rural New Yorker*, at Rochester; office of *Country Gentleman*, Albany; Farmer's Club of American Institute, New York, and at Philadelphia. This will give all an opportunity to see and taste this remarkable berry, and if any having ordered do not feel satisfied after seeing for themselves, the money will be refunded, if desired, before the plants are delivered. The plants will be sold for $4 per dozen, or $25 per hundred. Orders received immediately for plants to be delivered after July in rotation, as ordered. Address either

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Chairman, (Turner), pale buff, first-class show-flower.
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Grand Master, (Keynes,) yellow and crimson.
Golden Drop, (Keynes,) yellow, first-class show-flower.
Hon. Mrs. Trotter, (Reid,) white, with a distinct picotee lacing of deep rose.
Mrs. Keynes, (Keynes,) rosy blue, fine show-flower.
Piccolomini, (Turner,) French white tipped, extra fine.
Pioneer, (Turner,) bright crimson, extra show-flower.
Sir C. Campbell, deep maroon, fine.
Sir H. Havelock, Fellowes) light scarlet, extra.

FANCY DAHLIAS.

Bacchus, (Wheeler,) white, tipped purple.
Fulgens picta, (Vorisenon,) fiery orange, tipped, fine.
Kean, (Dodds,) crimson, tipped with white, extra fine.
Lady Hulse, (Keynes,) lilac, striped with maroon, fine.
Lord Stanley, (Dodds,) striped with crimson, fine.
Leonard (Wheeler,) bright orange, tipped with white, fine.
The Flirt, (Holmes,) rose, striped with purple.

Price, 50 Cents each; $5 per doz. Set of 20, $8.

The plants are strong and healthy, and in small pots; they therefore can be sent safely to any part of the country, and at little expense.
Orders by mail will receive immediate attention.

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BUFFALO, N. Y., April 20, 1860.
May.

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Forty per cent. less than Peruvian Guano,

and which we claim to be superior to any Guano or fertilizer ever imported or manufactured in this country. This Guano is imported by WM. H. WEBB, of New York, from Jarvis' and Bakers' Islands, in the "South Pacific Ocean," and is sold genuine and pure as imported. It has been satisfactorily tested by many of our prominent Farmers, and analyzed by the most eminent and popular Agricultural Chemists, and found to contain (as will be seen by our circulars) a large per centage of

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and other animal organic matter, yielding ammonia sufficient to produce immediate abundant crops, besides substantially enriching the soil. It can be freely used without danger of burning the seed or plant by coming in contact with it, as is the case with some other fertilizers; retaining a great degree of moisture it causes the plant to grow in a healthy condition, and as experience has proved

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BY MAIL, POST PAID.

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(*See next page.*)

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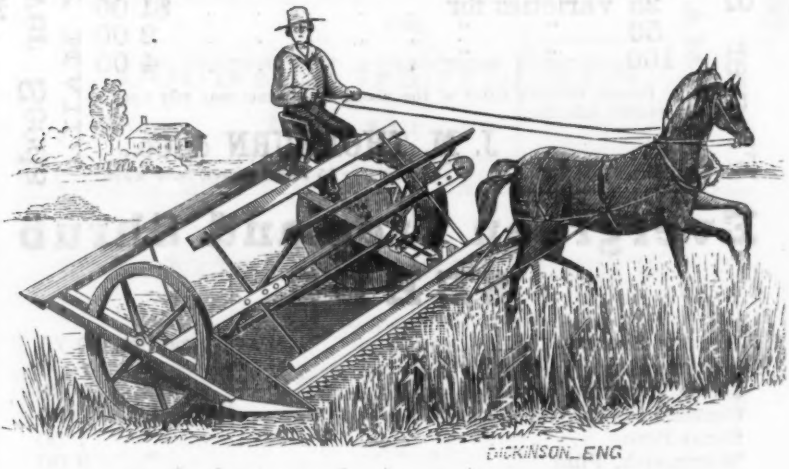

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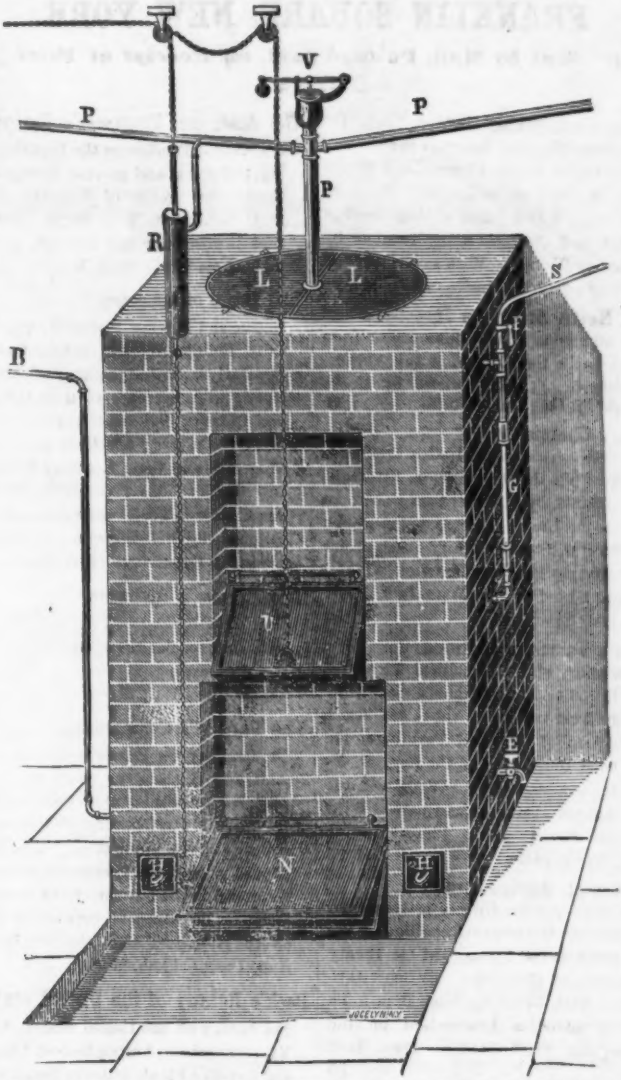

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Apr. A.

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